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Early Childhood Development

Delivering inter-sectoral policies, programmes and services in low-resource settings



Topic Guide

November 2014

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Photo on front cover: A mother plays with her young son in the Kenyan village of Mwea © Bill & Melinda Gates Foundation

Executive Summary

Early childhood development (ECD) has become a priority for research, policy and programming, at national and global level, with increasing recognition of the interconnections between a nation's development goals and the quality of services for all young girls and boys, and their families. The term 'ECD' is increasingly being used to reflect the evidence that young children's survival, health, care and learning involves interconnected and dynamic growth processes from well before the infant is born through into their early school years.

ECD is thus a broad and complex field, covering multiple policy sectors, and diverse research traditions, but with the aspirations of constructing more inter-sectoral, and more integrated models of services delivery. The Topic Guide offers brief summaries of key research, evaluations and case studies, as well as links to more specialist resources relevant to this vision for ECD. It draws on a very broad range of published research and policy studies, spanning health; nutrition; water, sanitation and hygiene (WASH); social protection; and education. It includes experimental trials of innovative programmes as well as policy reports on systemic reform. Despite the ambitious scope, inevitably the Topic Guide is not exhaustive, and for example has limited coverage of child protection issues that are also at the heart of an integrated vision for ECD. Specialist services for specific groups, notably young disabled children are also essential within an integrated and inclusive vision, but detailed discussion is beyond the scope of the guide.

The case for working towards more coordinated, more integrated policy, programming, capacity building and research is not new. Early childhood pioneers have emphasised the importance of respecting children's holistic development for at least two centuries; and flagship national programmes have been built up around service integration principles since the 1960s. There are many lessons to be learned. Introducing effective inter-sectoral integration can be a very positive step forward, but can also be very challenging to deliver in practice, especially in contexts with low resources and weak governance. The priority is to support practical steps towards quality holistic ECD in low- and middle-income countries where services for young children and families are growing rapidly, but not always coherently.

ECD is not just inter-sectoral. It is also dynamic. Just as the foetus, infant, young child and school student experience multiple transformations during their early years, so too, policy and programming must be sensitive to changing needs and priorities at different ages and stages, all embraced within the concept of 'ECD'. The significance of early childhood can hardly be overstated. Chronologically, it spans nearly the first half of childhood. Developmentally, it is even more significant, shaping all that follows. ECD encompasses several quite distinct early developmental phases. In this Topic Guide we distinguish the period 'from conception to birth' from 'birth to 2 years', followed by the 'preschool years' and the 'early school years'. These are not precise phases. They are shaped by cultural beliefs and institutional structures, as well as development changes in children's capacities, vulnerabilities and emerging autonomy; their needs for care, ways of communicating, playing and learning; as well as the patterns of their daily lives in modern societies, including access to ECD services and schools.

The Topic Guide has three specific goals:

- 1) to summarise evidence across the full age span of ECD, identifying key developmental phases and transitions, beginning before conception through to early grades of school, and also recognising intergenerational and life cycle issues
- 2) to map the various sectoral entry points for delivering comprehensive holistic ECD services, and highlight the distinct research traditions, key evidence, policy priorities and programmatic expertise associated with each sector
- 3) to identify opportunities and challenges in achieving more integrated ECD at every level: building inter-sectoral policies, management, programming, professional training, service delivery and research.

Section 1 and Section 2 introduce the topic and the concept of integrated ECD, with an extended case study of one of the longest running national programmes, Integrated Child Development Services, in India, which was initiated in 1975 (see Case Study 1 in Section 2).

Section 3 covers the period before conception, through pregnancy, and including the first weeks after birth. The impacts of a mother's health, well-being and education on their infant is well documented. Recent research now identifies specific epigenetic pathways from maternal nutrition at the time of conception through to long term development. Section 3 includes brief summaries of evidence on family planning, maternal nutrition and disease prevention, antenatal preparation and birthing practices, breastfeeding, neonatal care and early attachment relationships. Social protection and poverty reduction is an overarching policy priority during pregnancy and the neonatal period, within which specific initiatives can improve the health, well-being and prospects for mother and infant. An extended case study describes the large-scale federal Oportunidades programme in Mexico, introduced in 1997, which combines conditional cash transfers with coordinated health, nutrition and education interventions (see Case Study 2 in Section 3).

Section 4 focuses on the period from 0 to 2 years, when WASH, health and nutrition interventions have traditional prominence, along with early learning support via parenting programmes which are increasingly recognised as crucial within a comprehensive approach. One of the major research insights for this early life phase is that combining nutrition interventions with play-based learning and psychosocial support can have major long-term benefits for children. Section 4 also considers how employment opportunities, laws and practices around parental leave, and access to quality community-based childcare all impact on parents' capacities and children's well-being. Birth registration is identified as a crucial first step in children's and parents' entitlement to social protection and ECD services, especially for marginalised groups.

Section 5 looks at the 3 to 5 age group, commonly referred to as the 'preschool years', which anticipates enrolment into primary school – now a major transition for most of the world's children. There is a marked shift in the emphasis of policy and research for this age group, with much stronger engagement from the education sector, and a strong tradition of research evaluating the impact of experimental, mainly centre-based, programmes. Multiple replications demonstrate the potential impact on educational and psychosocial outcomes through the life course, in a few cases tracked through into middle age. Several of these 'classic' studies have provided the underpinning data of economic analyses on the investment

potential of quality ECD programmes, and these are now being widely replicated, including in low-income countries.

Attendance at preschool has growing significance in shaping life course trajectories for children. But in most regions, a very large gulf has opened up between the transformative promises offered by research and policy and the insufficient, often low quality and inequitable realities of access to services for young children and families. For the most part, these services are neither statutory nor compulsory, with limitations of finance and governance and a growing reliance in many low- and middle-income countries on NGO-led, faith-based and private-for-profit initiatives. There is well documented evidence of disadvantaged, disabled, and socially marginalised groups being under-represented – the very groups identified by global research as highest priority.

This age phase has also been a particular focus for experiments in service level inter-sectoral integration, notably through combining care and learning with nutrition, health checks and family support, and founded on evidence that holistic and child-centred interventions are more efficient, more appropriate and more user friendly for this age group – and their families. Integrated goals for this age group are frequently signaled as ‘early childhood care and education’ (ECCE) or ‘early childhood development, care and education’ (ECDCE). An extended case study describes the relatively recent, donor-led Ilifa Labantwana programme in South Africa (see Case Study 9 in Section 5). Ilifa Labantwana aims to influence policy implementation on integrated, scalable ECD interventions in a sustainable manner through a progressive cycle of research, advocacy, capacity building, finance modelling and support for government and providers.

Section 6 is about the transition years into compulsory school, a period dominated by questions around ‘school readiness’, which in this Topic Guide is treated as being not just about ensuring parents and children are prepared for school, but also about reforming school systems to be ‘ready’ for young children: accessible, high quality and inclusive. The dominance of education research and programmes for this age group is balanced in Section 6 with examples of nutrition, WASH and health interventions being integrated within school systems.

Examples of age and sector specific initiatives are offered throughout Sections 3, 4, 5 and 6, as well as more comprehensive and more integrated ECD programmes, from various regions of the world.

Finally, Section 7 of the Topic Guide steps back from specific programmes and research. Ten general conclusions are offered about achieving more integrated, or at the very least more coordinated inter-sectoral ECD, in summary:

- 1) Integrated ECD recognises that young children’s lives (and their parents’ lives) are lived holistically, not sectorally. Ensuring quality services are ‘joined-up’ at the point of delivery is a first indicator of progress.
- 2) Full-scale, systemic integration may not always be feasible, nor cost effective, especially in low- and middle-income countries. Building on sector-specific delivery platforms may be a cost effective and pragmatic way forward.

- 3) Horizontal integration requires coordination between social protection, health, nutrition, WASH, education, child protection, etc. An added challenge is to ensure integration within as well as between sectors.
- 4) Effective vertical integration links central government policies with local programmes and services, with clear lines of responsibility and effective two-way communications.
- 5) Vertical integration also includes middle level governance and finance streams, which can be a barrier to effective reform.
- 6) Effective coordination extends to non-state actors. In many countries the private sector, NGOs, and community groups are very significant service providers.
- 7) Integrated ECD systems are inclusive, with careful monitoring for equity, and especially targeted to the most marginalised, disadvantaged as well as disabled children.
- 8) Integrated ECD is also about ensuring continuity between age phases and smooth transitions between age-linked services.
- 9) Building capacity is a priority at every level. Training of sector specialists remains a priority, but with a shared vision for integrated ECD.
- 10) Implementing more integrated ECD involves being context sensitive, pragmatic and innovative; working in partnership with other stakeholders, including families and communities as well as children.

The evidence base for policy and programming in ECD is growing in quantity, quality, and consistency for most topics, from a relatively weak starting point only a few decades ago. Geographical and contextual reach has improved for some topics, offering greater confidence about both generalisability of core findings about risks to children's development and suggesting specific entry points for interventions that have proven effectiveness. Case studies of large scale ECD systems across a range of political and economic contexts also draw attention to contextual considerations that affect policy development and programme implementation, especially regarding more comprehensive and integrated ECD reforms.

Section 1: Introduction

1.1 Early childhood development matters

Early childhood development (ECD) has become a priority for research, policy and programming, with increasing recognition of the interconnections between a nation's development goals and the quality of services for all young girls and boys, and their families. While ECD was not explicitly addressed as a Millennium Development Goal (MDG), the UN Secretary General's Report to General Assembly, 2010, recognised ECD as core to their achievement:

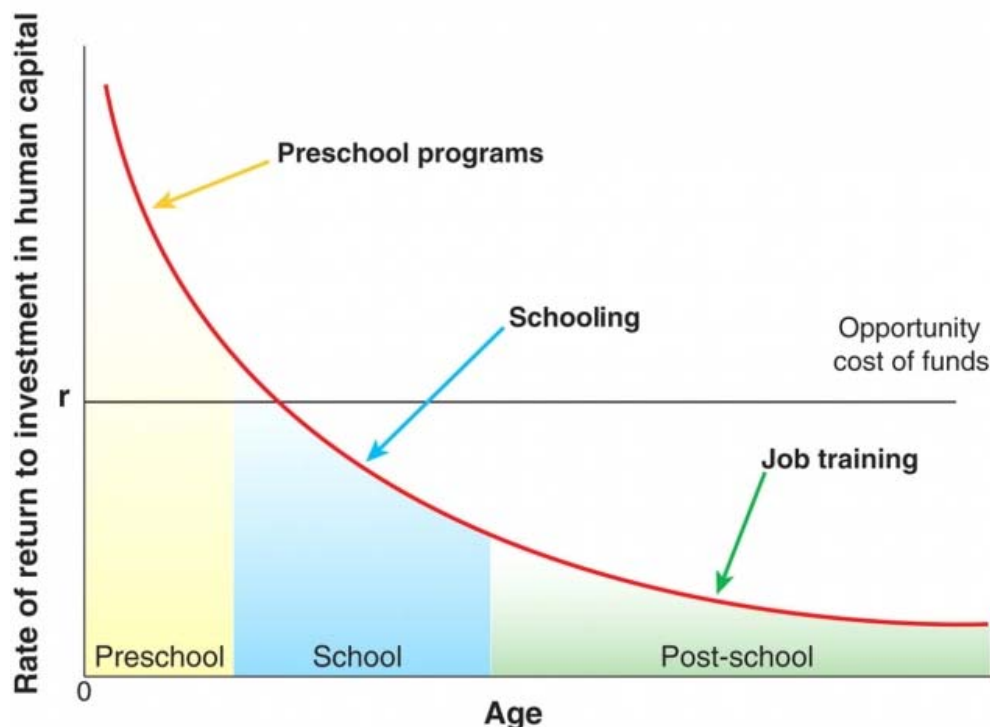
"The Millennium Development Goals are closely interconnected in their impact on the rights of the young child. Poverty, maternal and child survival, nutrition, health, protection from violence, abuse and exploitation, gender equality and human development have short- and long-term consequences for the rights of young children, with implications for future generations, as poverty cycles are reproduced." (UN, 2010, p. 4)

Now, a strong case is being made for ECD to be central within post-2015 development goals (Aber et al., 2013; UNSDSN, 2014). The core agenda to ensure that 'no one is left behind' – pointing strongly towards effective strategies for early intervention and prevention:

"The evidence is clear, investing in ECD leads to gender equality and empowerment, better health and education outcomes, improved skills, abilities and productivity, narrows the income, ethnic, and geographic inequality gaps, provides timely intervention for persons with disabilities, and is a cost effective strategy for eliminating disadvantage." (Consultative Group on Early Childhood Care and Development Task Force for the Post-2015 Development Agenda, 2012, p. 19)

The positioning of ECD at the heart of global development reflects the convergence of persuasive lines of policy analysis and research evidence that every young child is entitled to survival, to development and education, and that early childhood is a critical period: critical not only for individual children's development, but for achieving social justice and for the prosperity of societies. Heckman and colleagues have been most influential in translating the case for ECD investment into the language of economics (Heckman, 2008; see also Figure 1 below).

Figure 1: The 'Heckman Curve' – the earlier the investment, the greater the return
Rates of return to human capital investment



Source: Heckman 2008, figure 18, p. 311.

Economic analyses of human capital investment largely build on longitudinal evidence from experimental early interventions that have tracked long-term cognitive, psychosocial, educational, social welfare and labour force outcomes (e.g. Schweinhart et al., 2005). They point to the earliest years as most cost effective for delivering returns (van der Gaag and Tan 1998; Barnett, 2009). Recognising the investment potential of ECD is not an alternative to respecting fundamental rights, and engaging the power of ECD to promote social justice and greater equality. Nor is investment in ECD an alternative to more structural poverty reduction strategies. All these lines of argument are complementary in building the case for ECD.

Progress in neuroscience provides scientific underpinning for a renewed emphasis on the critical importance of ECD. Decades of research have demonstrated effects of poverty, institutionalisation, undernutrition, deprivations and trauma, the role of risk and protective factors in children's relative vulnerability/resilience and the potential for reversibility, and remediation (Rutter, 2006; Wachs and Rahman, 2013). Neuroscience research is beginning to reveal the physical expressions of these processes in the growing and changing structure and function of the brain (Oates et al., 2012; Shonkoff and Phillips, 2000; Center on the Developing Child, 2011). Toxic stress from early childhood adversity can lead to changes in learning, behavior and physiology. Physiological disruptions increase the chance of stress-related chronic disease which can further widen health disparities (Shonkoff et al., 2012).

Strong associations between poverty and child development outcomes have been found amongst preschool children within developing countries (Fernald et al., 2012a; 2012b) which contribute to the transmission of inequalities through childhood (Woodhead et al., 2013). A powerful catalyst for global policy engagement in these issues has been a series in *The Lancet*, which estimated that "...200 million children under 5 years fail to reach their potential in

cognitive development because of poverty, poor health and nutrition, and deficient care” (Grantham-McGregor et al., 2007, p. 60). Subsequent papers in the series have elaborated on this ‘loss of developmental potential’ and on the evidence for effective early prevention and intervention (Engle et al., 2007; 2011; Walker et al., 2011).

Some areas of ECD research on these issues is robust and powerful, but with many gaps in applied research into programme effectiveness and implementation, with some geographies and age groups receiving much more attention than others. Also, rapid economic and social development is shifting the context of ECD policy and programming, for example: inequality and social inclusion is becoming a major challenge in rapidly urbanising and mobile low- and middle-income countries (Pells and Woodhead, 2014); school readiness issues now dominate in contexts where Education for All (EFA) goals for access to primary education have been achieved (Britto, 2012); and planning effective ECD interventions for parents and children in fragile states, post-disaster contexts, and disease emergencies becomes an increasing priority (UNICEF, 2011).

One of the biggest challenges for research, policy and programming is to build more integrated ECD systems: comprehensive, equitable, high quality services that span all sectors, client groups and age groups. Reviewing the evidence, UNICEF Executive Director Anthony Lake and World Health Organization (WHO) Director-General Dr Margaret Chan confirm that:

“...to be most effective, interventions must be intersectoral, going beyond education to encompass health, nutrition, and protection. The healthy development of a child's brain depends on multiple positive experiences. Nutrition feeds the brain; stimulation sparks the mind; love and protection buffer the negative impact of stress and adversity. And distinct interventions are mutually supportive, achieving the strongest results when delivered together.” (Lake and Chan, 2014, p.1)

1.2 Goals for the Topic Guide

The overall aim of this Topic Guide is to offer an overview of the rapidly growing field of ECD, Three specific goals have shaped the Topic Guide:

- 1) to summarise evidence across the full age span of ECD, identifying key developmental phases and transitions, beginning before conception through to early grades of school, and also recognising intergenerational and life cycle issues
- 2) to map the various sectoral entry points for delivering comprehensive holistic ECD services, and highlight the distinct research traditions, key evidence, policy priorities and programmatic expertise associated with each sector
- 3) to identify opportunities and challenges in achieving more integrated ECD at every level: building inter-sectoral policies, management, programming, professional training, service delivery and research.

The rest of this section elaborates on these goals; explains how the Topic Guide is organised, including the use of research summaries, case studies and links to wider resources; and summarises the approach taken in the Topic Guide to assessing quality of evidence.

1.2.1 A life cycle perspective on ECD

Early childhood is formally defined by the UN Committee on the Rights of the Child as *“the period below the ages of 8 years”* (OHCHR, 2005, p.2). For this Topic Guide, we define early

childhood to include the period from around conception, in recognition that critical influences on ECD begin long before the infant is born, and even before the infant is conceived. On this definition, ECD covers a full eight years, nearly the first half of childhood. ECD is even more significant developmentally, as the most formative and critical period of the human life course, which shapes all that follows.

A life cycle framework is intergenerational, extending to the health, well-being, and ultimately the survival of the young woman on whom her newborn infant(s) will depend to survive, thrive and develop throughout their childhood and beyond. A life cycle framework also includes the role and capacity of fathers, siblings, other household members and caregivers, and wider kin and community, in supporting mothers' well-being and infant development. Ultimately, what happens to children before they are 8 years old will shape life course trajectories through to becoming parents themselves.

The growing infant is highly responsive to the positive impact of a secure household, a healthy environment, good nutrition, quality care, and opportunities for play and learning. By the same token, every young girl or boy is highly susceptible to the negative consequences of deprivations, risks and shocks, inequalities and discrimination, related to their gender, ethnicity, disability, household poverty or location. Inequities at the beginning of life can be accentuated over the life cycle but ECD can also lay the foundations for greater equality and inclusive social and economic development (UNESCO, 2007).

Identifying the multiple pathways for harnessing ECD to achieve gender equality reinforces the argument for framing ECD within a life cycle perspective:

"ECD offers several pathways through which gender equality can be achieved. The first pathway is through programs that directly serve the child, such as childcare and development, early learning, and preschool programs (formal and non-formal). This pathway improves outcomes for the girl child herself... A second pathway is through the benefits of ECD programs for the other female members of the family. When mothers are at work or otherwise unavailable, older sisters are often substitute parents for younger siblings. Evaluation data from several communities with ECD programs has demonstrated an improvement in girls' enrolment in primary school.... Furthermore, mothers benefit economically from the provision of ECD services." (Consultative Group on Early Childhood Care and Development Task Force for the Post-2015 Development Agenda, 2012, p. 10-11)

Moreover, a woman's well-being directly affects the development of her child through childhood and into adolescence. For girls especially, deprivations during ECD transmit into adolescent outcomes, which in turn impact the next generation; vividly illustrated through life cycle analysis of the risks of undernutrition (Yousafzai et al., 2013).

In summary, the first goal of the Topic Guide is to highlight the importance of a life cycle perspective on ECD. Four broad age phases are identified in Sections 3, 4, 5 and 6, including core research evidence, evaluations and case studies that can inform policy and programming relevant to each age group.

1.2.2 Multi-sectoral and comprehensive

Secondly, the Topic Guide recognises ECD as (by definition) a multi-sectoral field for policy and programming and a multi-disciplinary field for research and evaluation. ECD has seen huge investment of research and policy effort, with significant knowledge systems now available, and well articulated expertise spanning health; nutrition; water, sanitation and hygiene (WASH); child protection; education; and social protection. Growing sectoral expertise is one of the strengths of current ECD, but also highlights one of the strongest challenges.

Each sector has a more or less well articulated conceptualisation of ECD priorities: about malnutrition and stunting, disease and vaccination, violence and child protection, early intervention and special needs, or preschool education and school readiness. It has been less common for an early education expert to engage with research on social protection, or an expert in care of newborns to consider factors affecting children's health in school, and vice-versa. It is increasingly recognised that these ECD domains are interconnected and synergistic in terms of their impact on young children's developmental pathways. For example, undernutrition impacts children's physical development and makes them more vulnerable to disease. Undernutrition also impacts intellectual development, and in turn educational progress. There is also good evidence of long-term consequences for psychosocial well-being (Dercon and Sanchez, 2013).

Sectoral experts also prioritise specific age phases as most critical, with health-focused initiatives dominating the very earliest months and years, and education initiatives much more prominent during preschool and school transition years. The period between around 2 and 4 years old generally receives less attention from all sectors. Needless to say, children and their families don't generally perceive their lives in sectoral terms, and children can be at risk where services are not 'joined up'. The overall picture resembles a patchwork in many countries where it is urgent to move towards a more integrated vision.

1.2.3 Integrated ECD systems

A third goal for the Topic Guide is to identify steps towards achieving more integrated ECD systems – in other words moving from 'multi-sectoral' to 'inter-sectoral' – and effectively spanning different sectors and age phases within a holistic understanding of human development.

Objectives for more integrated ECD include:

- 1) to realise every young child's right to survival, development and education, recognising the interdependencies between nutrition, health, learning, and psychosocial development
- 2) to support parents and other caregivers in fulfilling their responsibilities and achieving their aspirations for their children, including through social protection programmes, employment and housing policies as well as core sectors concerned with children
- 3) to provide more coherent, 'joined-up' services at the point of delivery, in ways that improve accessibility and relevance to children's and families' daily lives in rapidly changing societies
- 4) to improve long-term outcomes in health, learning and well-being through adolescence and into adulthood, including intergenerational benefits

- 5) to improve equity for all girls and boys, irrespective of their economic and social circumstances, abilities or disabilities, through services that are comprehensive, inclusive and high quality
- 6) to improve efficiency and cost effectiveness of ECD sectors and systems in delivering ECD goals in partnership with parents and communities
- 7) to foster evidence-based innovation in delivery of sustainable ECD programmes, especially in low resource contexts where professional capacity and governance systems may be at early stages of construction.

Building comprehensive policies, programmes and services that are holistic, inclusive and cover the full age span is one of the greatest challenges for the coming decades, especially in low resource contexts:

“The entry points to influence young children’s development are diverse and involve multiple stakeholders. The various sectoral policies that affect ECD outcomes include healthcare and hygiene, nutrition, education, poverty alleviation, and social and child protection. These policies can be aimed at the pregnant woman, the child, the caregiver or the family as a whole. Interventions can take place in many environments, including the home, at a preschool or childcare center, a hospital or community centers.”
(Neumann and Devercelli, 2012, p. 22)

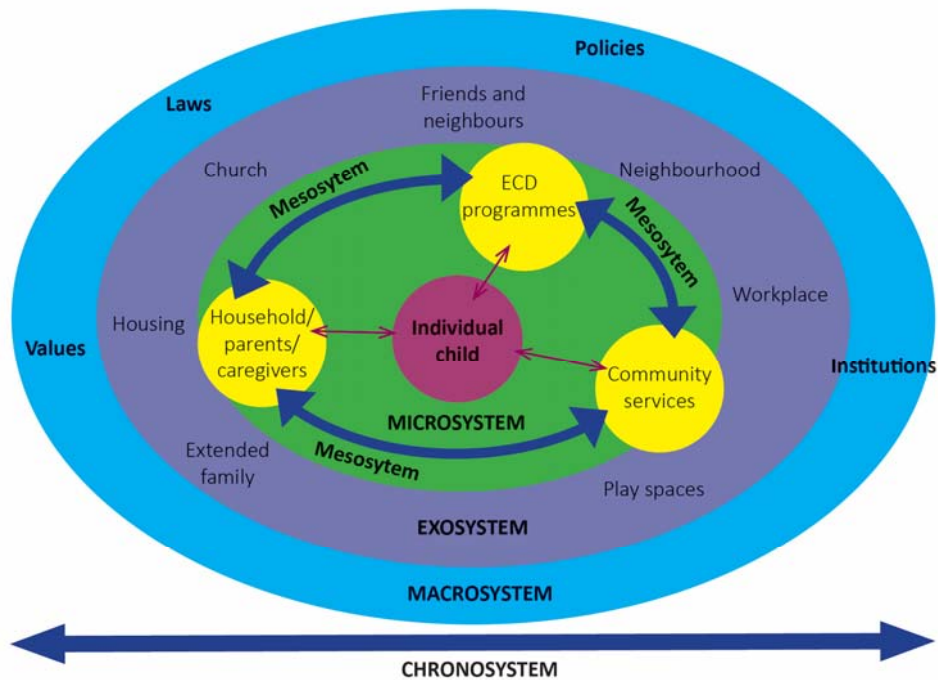
Steps towards achieving more integrated ECD range from the most modest coordination and collaboration through to full-scale system reform and physical integration of services. These options are introduced in Section 2 and revisited again in Section 7.

1.3 Conceptual framework

A bio-ecological conceptual model is helpful as a starting point for a Topic Guide on holistic, multi-sectoral ECD. It is a systemic model that identifies multiple potential entry points and delivery platforms for ECD. The most obvious proximal entry points are the programmes in which young children participate. But the model also recognises distal entry points, including laws and regulations, social protection programmes, especially those that alter parents’ capacities to support their children’s development.

The growth of the young child (including the resources and risks for his or her development) are shaped by (as well as shaping) ‘micro-systems’ within the household and immediate environment (notably with the mother, father, siblings, other caregivers), which gradually extend into wider community contexts of health clinic, preschool, church, etc. The interconnections amongst these micro-systems comprise the ‘meso-system’, which more indirectly shapes each girl or boy’s development, notably links between parents and health workers, teachers, or church leaders. More distal ‘exo-system’ influences include mothers’ and/or fathers’ employment as this constrains their resources of time and money for housing, nutrition, learning resources and childcare. Public health infrastructure, transport networks, media and communications are also part of the ‘exo-system’. Each of these sub-systems is in turn embedded in a ‘macro-system’ of laws, policies, and institutions, across multiple sectors, as well as the cultural norms and values that moderate their impact on children’s lives. Finally, these are dynamic systems, within and across generations, signaled by the concept of ‘chronosystem’ (Bronfenbrenner, 1979; see Tudge et al., 2009 for a more recent review; see Figure 2).

Figure 2: A bio-ecological systems model of ECD



Source: Adapted from Bronfenbrenner (1979). *The Ecology of Human Development: Experiments in Nature and Design*.

ECD interventions vary according to their sector focus, system focus and delivery platform:

- Many interventions target the mother-baby micro-system, notably support for early neo-natal care, breastfeeding, early nutrition, attachment and learning. These may be delivered at a birthing clinic, community health facility or through home visiting.
- Traditional ECD programmes are about constructing specialised micro-systems focused on childcare, early play and learning (notably various forms of preschool) which transition into more formal education. Each of these micro-system interventions is associated with specific goals and personnel at various skill levels.
- Meso-system influences are often central to ECD goals, notably via parent education and support programmes, as well as many community-based initiatives.
- Modern media offer new opportunities to supplement more traditional programmes, notably through television and digital technologies: targeted at parents (e.g. through key health messages); and/or to children themselves (e.g. through children's television programmes, such as Sesame Street).
- A wide spectrum of initiatives (across multiple sectors) are focused on improving the child's exo-system, including creating more healthy environments, in terms of housing and WASH, ensuring basic safety and child protection as well as enabling children's primary caregivers with the resources, time and capacities to support development, including via employment laws, parental leave programmes and social protection.
- More comprehensive ECD reforms recognise that macro-system reform is essential in order to deliver long-term and sustainable programmes and services. ECD policy development is crucial as a starting point for identifying the most cost effective entry

points within specific country systems, with account taken of the potential for municipal, community and NGO-led programmes, the role of donors, as well as potential scope for building public private partnerships.

Adding a timeline (age and stage) dimension into Figure 2 reinforces that ECD processes and systems are dynamic, and while some interventions are age-critical, others are more continuous:

- Age-critical interventions include preparation of adolescents and mothers-to-be, support at birth, birth registration, establishing early breastfeeding and infant care systems, and vaccination against disease.
- Interventions focused on broader age phases, include parent education, as well as preschools and the early grades of primary school.
- Some programmes are more continuous through early childhood and beyond, notably social protection, WASH and health services, with specific delivery platforms tailored to children's shifting micro-systems within households, communities, preschools and schools.

1.4 Scope and organisation of the Topic Guide

The main emphasis of this Topic Guide is on evidence relevant to low- and middle-income countries where strengthening ECD is a very high priority, but achieving an effective ECD system can be very challenging. Section 2 introduces the concept of more integrated ECD in more detail. This Topic Guide encompasses WASH, health, nutrition, education and social protection, as in Figure 3. These sectoral starting points recur through the Topic Guide, but with the aim to draw attention to opportunities for more inter-sectoral policy and programming via a variety of delivery platforms.

Specific topics are linked to four broad age phases in Sections 3, 4, 5 and 6 of the Topic Guide. The identification of age phases draws attention to the range of policy responses, services and professional capacities that are needed within an integrated ECD system, each tailored to significant stages and transitions in this most dynamic period of the human life cycle. Each of these age phases requires a package of coordinated programmes and services.

Figure 3: Mapping of age phases across sectors

	Before conception	Pregnancy to birth	Birth - 2 years	3 - 5 years	6 years +
Water, sanitation and hygiene (WASH)	Healthy environments				
				Integrating WASH within preschool programmes	WASH in schools
Health	Family planning Healthcare for girls and mothers-to-be	Antenatal preparation Mother-to-child infection prevention Birthing practices Newborn care	Breastfeeding Reducing disease	Integrating health within preschool programmes	School-based health interventions
Nutrition	Nutrition for girls and mothers-to-be		Infant nutrition	Integrating nutrition within preschool programmes	School-based nutrition interventions
Early learning and education	Preparation for parenting		Early interactions and stimulation Parenting interventions including home visiting Community-based programmes including day care	Centre-based preschool education Home and community-based learning Parenting support and training	Family's readiness for school Children's readiness for school Schools' readiness for children
Social protection and community programmes	Social protection and poverty reduction				
			Birth registration Parental leave and childcare		

Figure 3 provides an overall mapping of age phases across all sectors, identifying specific entry points and interventions, most of which are elaborated in later sections. It is important to emphasise that the Topic Guide is not exhaustive of the opportunities for strengthening ECD, nor are the topics in specific age phases necessarily exclusively relevant to that age phase. See Britto et al. (2011) and Denboba et al. (2014, forthcoming) for other comprehensive frameworks.

Section 3 covers the period before conception, through pregnancy, and including the first weeks after birth. Section 4 focuses on the earliest years of infancy, when WASH, health and nutrition interventions have traditional prominence, along with early learning support via parenting programmes which are increasingly recognised as crucial within a comprehensive approach. Section 5 looks at the preschool years, when children aged around 3 to 5 years are increasingly enrolling in early childhood care and education programmes. This age phase has been a particular focus for experiments in service level integration. Section 6 is about the transition years into compulsory school, a period dominated by issues around school readiness, which in this Topic Guide is balanced with examples of nutrition, WASH and health interventions for the age group.

Examples of age and sector specific initiatives are offered throughout Sections 3, 4, 5 and 6, as well as more integrated ECD programmes, from various regions of the world. Finally, Section 7 of the Topic Guide steps back from specific programmes and research, offers ten general conclusions relevant to planning for more integrated – or at the very least more coordinated ECD services.

This Topic Guide covers a vast field of research, policy and programme experience. Inevitably, treatment of individual topics is relatively brief, intended to identify key research and provide illustrative case studies, with links to more detailed treatment elsewhere. Entry points that are tied in this Topic Guide to specific age phases are often cross-cutting, such as social protection and poverty alleviation programmes which apply to all age phases.

We also acknowledge gaps in the Topic Guide's coverage, notably in the area of child protection. It is estimated that two thirds of young children experience some type of violence or harsh discipline, and some are victims of abuse and neglect, exploitation and trafficking (UNICEF, 2014). Strengthening child protection should be a feature of any ECD programme, as well as specific agencies or programmes dedicated to child protection. Also, inclusive services, including specialist diagnostics, early intervention for disabled children and other at risk groups are required for all age phases, but we can only give cursory treatment in this Topic Guide.

1.5 Assessment of evidence strength

This Topic Guide offers a brief introduction and guide to key research and programme evaluations across a vast field encompassed by ECD. It is not an exhaustive review of the evidence on any of the specific topics covered. Specialist systematic reviews have been a major resource, along with reports on specific sector-based research and evaluations. The Topic Guide also includes: (i) case studies of major national programmes that offer lessons on scaling-up integrated ECD, with evidence as available; (ii) systematically evaluated and rigorous interventions and pilot projects, including randomised control trials that demonstrate

efficacy of specific interventions, with long term follow up evidence where available; (iii) innovative examples of steps towards more comprehensive and integrated ECD in various countries and regions.

One ongoing challenge for developmental science is the dominance of normative evidence, drawn from a narrow range of (mainly affluent Western) contexts informing core ‘textbook’ knowledge about how young children learn, the importance of secure attachment relationships, the role of parents, etc. Bornstein et al. (2012) estimate that less than 10% of research in developmental science comes from regions inhabited by 90% of the world’s population, with consequent over reliance on relatively small numbers of localised studies. Well designed studies are becoming much more widespread, which provides a stronger basis for drawing general conclusions, especially about probable effectiveness of interventions, and providing more nuanced contextual accounts that may shape appropriate interventions.

Dividing early childhood into age-phases is another normative feature of the developmental paradigm, which has been followed in this Topic Guide. In doing so, we acknowledge there is a risk of privileging chronological age as the major consideration for ECD programming. Societies vary in how far chronological age has traditionally been recognised and treated as the benchmark for expectations about children’s capacities, roles, responsibilities and use of time (Woodhead, 2009). The needs of young children have been understood very differently according to local convention and practices around the treatment of young girls and boys at different ages, and the extent to which individual differences are recognised (Harkness et al., 2013). Rapid social change is shifting these traditional beliefs, including the impact of universal birth registration, and age-graded education systems. The significance of research location, disaggregation by gender, disability, minority group status, poverty, intra-household dynamics, etc. is highlighted wherever possible, especially in the sections on inclusion and equity (notably 5.4; 6.4; and 7.7).

In preparing this Topic Guide we have assessed the strength of the evidence that we have used, based on the DFID Note on Assessing the Strength of Evidence (2014).

Given the wide ranging scope, and the diverse literatures drawn on, the Topic Guide does not formally assess single studies but does indicate throughout where evidence is especially strong, and where there are gaps. The overall assessment is given in Table 1. The Topic Guide also offers summary assessments tables for evidence reviewed in the major age phase Sections 3, 4, 5 and 6. These summary assessments are only indicative, and cannot encapsulate the full range of evidence cited.

Table 1: Overall evidence strength assessment for the ECD Topic Guide

Quality of evidence:	Size of body of evidence:	Consistency of results:	Context
Variable, covering the full range of research designs, scale and rigour	Medium but highly variable between topics	Mixed but with consistent evidence on many topics	Increasingly global with notable geographical gaps for some topics

As the quantity, quality and geographical range of ECD research increases, greater confidence can be offered about both generalisability of core findings about risks to children's development and specific entry points for interventions that have proven effectiveness. Case studies of large-scale ECD systems across diverse political and economic contexts also draw attention to contextual considerations in policy development and programme implementation, especially the challenges of achieving more integrated ECD systems.

Some areas of research have received large investment (notably nutrition and health research). Other studies are growing but still patchy, especially systematic evaluations of innovative approaches to integrated service delivery in the poorest countries, and for the most disadvantaged groups, notably in Africa. Priorities include:

- consolidating the quantity and focus of longitudinal evaluations of specific interventions in diverse contexts and geographies
- research into innovative ECD delivery platforms including building on existing sectoral systems to achieve more inter-sectoral goals
- capacity building initiatives at all levels, including specialist sectoral training and broad based para-professional training and parent support
- evaluations of scale-up for targeted programmes that can promote equity and social inclusion from infancy through to school
- governance and finance studies including on best ways to harness public, private and community initiatives towards more comprehensive and integrated services, in ways that are well managed, high quality and cost effective.

In a financial context that strongly prioritises cost effectiveness as well as programme effectiveness, value for money issues are crucial, especially when reviewing for example: a centre-based versus home visiting programme; or capacity building options based around a balance of high versus basic skill ECD specialists; or sectoral versus more integrated approaches. Cost effectiveness of ECD investment is powerfully demonstrated by leading economists, notably Heckman and colleagues (Heckman, 2006; 2008; Section 1). The World Bank has developed tools for analysing costs and benefits, including an 'ECD Calculator' (World Bank, 2014), mainly focused on school readiness indicators. The most recent World Bank report illustrates costs, impacts and returns on investment across a wide range interventions (Denboba et al., 2014 forthcoming, p. 3). Further work is needed to develop and apply 'value for money' tools, including assessing cost effectiveness of more integrated programmes with more comprehensive ECD outcomes.

1.6 Related resources

Some of the issues covered in this ECD Topic Guide have already been the subject of specialist DFID-funded Topic Guides:

Meeker, J., Thompson, S. and Barnett, I. (2013). *Nutrition Topic Guide*. HEART/MQSUN.
<http://www.heart-resources.org/wp-content/uploads/2013/10/HEART-Nutrition-Topic-Guide.pdf?e64a1e>

Scott, Z. (2011). *Topic Guide on Social Protection*. GSDRC.
<http://www.gsdrc.org/docs/open/SP1.pdf>

Many resources are now available that can help build effective ECD systems. Besides the references provided throughout the Topic Guide, see for example:

UNICEF Early Childhood Resource Pack:

http://www.unicef.org/earlychildhood/index_42890.html

UNESCO Equity and Inclusion tools:

http://www.unesco.org/bpi/pdf/iatt_equity_inclusion_tools_042008_en.pdf

INEE Toolkit on Early Childhood Development, especially relevant to fragile states and post-emergency situations: <http://toolkit.ineesite.org/toolkit/Toolkit.php?PostID=1058>

Aga Khan Foundation www.akdn.org have partnered with University of Toronto and Red River College's on-line Science of Early Child Development (SECD) program www.scienceofecd.com to offer adaptations for a variety of international and developing world contexts, and for delivery via Aga Khan University Institute for Human Development <http://www.aku.edu/ihd/Pages/home.aspx>

The Early Childhood Development Virtual University (ECDVU) has pioneered courses for early childhood leaders especially in Africa <http://www.ecdvu.org>

ECD focussed foundations, as well as global and regional ECD networks are important resources, including:

Consultative Group on Early Childhood Care and Development <http://www.ecdgroup.com/>

Asia-Pacific Regional Network for Early Childhood (ARNEC) <http://www.arnecc.net/>

Africa ECD Working Group <http://www.africaecd.org/>

International Step by Step Association (ISSA) <http://www.issa.nl/>

Bernard van Leer Foundation <http://www.bernardvanleer.org/English/Home.html>

Aga Khan Foundation <http://www.akdn.org/>

Open Society Foundations (OSF) Early Childhood Program

<http://www.opensocietyfoundations.org/about/programs/early-childhood-program>

Children's Investment Fund Foundation (CIFF) <http://ciiff.org/priority-impact-areas/educational-attainment/early-learning/>

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Section 2: What is integrated ECD?

This Topic Guide has three major goals, as outlined in Section 1: to summarise evidence on ECD; to map sectoral entry points; and to identify opportunities for more integrated ECD. There is universal agreement that ECD is by definition multi-sectoral. There is also widespread agreement that achieving more integrated ECD – moving from ‘multi-sectoral’ to ‘inter-sectoral’ – is more effective and cost effective. There is much less consensus about the feasibility or realistic prospect of full-scale ‘integration’ of ECD systems (from policy to service delivery) compared to more modest and pragmatic solutions. This section provides an introduction to this overarching issue.

In its guidance on rights in early childhood, the UN Committee on the Rights of the Child reminds States parties:

“...that the right to survival and development can only be implemented in a holistic manner, through the enforcement of all the other provisions of the Convention, including rights to health, adequate nutrition, social security, an adequate standard of living, a healthy and safe environment, education and play (Arts. 24, 27, 28, 29 and 31), as well as through respect for the responsibilities of parents and the provision of assistance and quality services (arts. 5 and 18). From an early age, children should themselves be included in activities promoting good nutrition and a healthy and disease-preventing lifestyle.” (UN Committee on the Rights of the Child, 2005, para 10).

Integrated ECD starts from the simple and compelling idea of comprehensive services that avoid fragmentation and bring together sectors and stakeholders at every level (ministries, professionals, policies, programmes, services, communities, parents and children) in the shared mission: to give every girl and boy the best start in life. But delivering on this simple and compelling idea can be very complex and controversial, depending on the political and financial context and capacity for reform, the pre-existing infrastructures and the priorities of donors, NGOs and other change agents.

2.1 A brief history of integrated ECD

Integrating early childhood services (notably nutrition, health and education) is not a new idea. Holistic visions of early childhood can be traced back many centuries, and translated into child-centred nurseries and kindergartens, originating especially in Europe, North America and other industrialised Western societies. Early examples include:

- The comprehensive US Federal anti-poverty programme Head Start was initiated in 1964, in parallel with numerous smaller scale research-based interventions (Zigler and Styfco, 2004).
- The Government of India initiated the national Integrated Child Development Services, ICDS programme in 1975 (see Case Study 1).
- Innovative integration was already being achieved at a central government level in Sweden by 1975, when the National Board of Health and Welfare took responsibility for all preschool services, with a shift to the Ministry of Education in 1995 (Segal, 2010).
- Around the same period, the Netherlands took steps to integrate preschool with early stages of the primary education cycle (Woodhead, 1979).

Ministry-level coordination is more common than full ministerial integration, while service level integration has been more widely introduced, for example in the form of multi-sectoral, multi-service ‘children’s centres’ in the UK (Siraj-Blatchford and Siraj-Blatchford, 2010). Steps towards greater professional coordination are a prerequisite for integrated ECD, beginning with professional training, illustrated by the evolution of the ‘social pedagogue’ in Nordic countries as a more holistic approach to working with young children (Cameron and Moss, 2011). Achieving integration is not just about system-level reform and innovation. Fundamentally, it is about respecting the interdependencies amongst young children’s fundamental needs, rights and domains of development respecting their distinctive ways of communicating, playing and learning, their vulnerabilities and their capacities, and the extraordinary series of transformations and transitions during the earliest years of life. It is also about recognising the diversity of contexts for ECD and capacities of parents or other caregivers to support their children’s development. It must also be acknowledged that the field of ECD is distinctive in the plurality of visions for young children, expressed through diverse programme models, curricula and pedagogies.

The first detailed example in this Topic Guide is appropriately the Integrated Child Development Services (ICDS), initiated by the Government of India in 1975. ICDS is one of the earliest established, most ambitious, and largest scale integrated programme in (at that time 1975) a low-income country. Summarising ICDS draws attention to some of the major challenges facing comprehensive, multi-sectoral initiatives, which will be elaborated through later sections of the Topic Guide.

Case Study 1: Integrated Child Development Services (ICDS), India

Integrated Child Development Services (ICDS) is the Government of India’s flagship child welfare programme which began in 1975 as a national comprehensive programme, delivered through community-based, local and often quite small *Anganwadi* centres (‘Courtyard Shelter’), typically led by a local woman who has received basic training in ECD (Streuli et al. 2011). Numerically, ICDS is still the largest early childcare programme in the world, with 1.4 million *Anganwadi* centres operational by December, 2010. The number of child beneficiaries nearly doubled between 2003-04 and 2008-09 (from 377 million to 725 million) (DESI, 2010).

The first goal of ICDS has been to improve nutrition in a country which even in 2013 still had alarmingly high rates of malnutrition and stunting, affecting 61.7 million, or 48% of all under-5s in India. But ICDS has always been holistic, as currently expressed through five ambitions (Programme Evaluation Organisation, 2011):

- 1) Improve the nutritional and health status of children below the age of 6 years and that of pregnant and lactating mothers as well as of adolescent girls.
- 2) Lay the foundations for proper psychological, physical and social development of the child.
- 3) Reduce the incidence of mortality, morbidity, malnutrition, and school dropout.
- 4) Achieve effective coordination of policy and implementation among various departments to promote child development.
- 5) Enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper health and nutrition education.

Anganwadis aim to deliver on these goals via supplementary feeding of children under 6 and growth monitoring; immunisation; health check-ups; referral services; antenatal and postnatal care of mothers; nutrition and health education; and non-formal preschool education for 3 hours a day for children aged 3-6 years.

At constant prices (1999), budgetary allocation to ICDS by the central government increased nearly three-fold between 2003-04 and 2008-09, and by 2010-11 was INR 87 billion. A Programme Evaluation Organisation study (2011) of ICDS covered 19,500 households across 100 districts in 35 states and estimated ICDS's coverage of children aged 6 months to 72 months as 31%.

Main findings on the impact of ICDS are:

- ICDS has had a significant impact on improving the rates of breastfeeding immediately after birth. The percentage of children breastfed within an hour of their birth is 10% higher in the case of ICDS beneficiaries than children not covered by ICDS.
- The proportion of underweight children in India declined from 51.5% in 1992-93 to 40.4% in 2005-06. ICDS had a positive effect on nutritional status in some states but not in others.
- Overall, ICDS has had a positive but marginal impact on immunisation rates of children. It has had a significant impact in the case of measles immunisation.
- Nationally, the preschool component of ICDS has had a small positive impact on enrolment at primary school and reduced dropout. 5% more ex-ICDS children attend primary schools, than children who haven't been enrolled in ICDS.
- There is considerable variation in preschool provision between states. A Ministry of Women and Child Development report (2013, p. 16) states there is, *"Overwhelming evidence that the preschool education component of the ICDS scheme is particularly deficient in quality, and almost non-existent in anganwadis, in some parts of the country."*

Recently, high parent demand for preschool education has led to an increasing trend in many states of India for parents with sufficient resources to abandon *Anganwadis* in favour of enrolling their children in the lower kindergarten classes of 'low-fee' private primary schools, that offer early initiation into academic learning, with the added attraction of English-medium teaching (Woodhead and Streuli, 2013; James and Woodhead, 2014).

These evaluations draw attention to many of the challenges of delivering an integrated programme on such a massive scale. Many *Anganwadi* centres are insufficiently resourced to deliver the ambitious goals of ICDS. In many cases, they are operating in a totally inadequate building, without safe drinking water, nor space for children to play. Regulations to govern basic infrastructure are weakly implemented. *Anganwadi* workers are often overburdened, underpaid and have only very basic training, and learning materials are generally inadequate (Programme Evaluation Organisation, 2011). The scale of ICDS places a huge financial burden, and as a rule, *Anganwadi* centres are under-resourced in practice. Moreover, the Programme Evaluation Organisation report (2011) identifies a big discrepancy between reported expenditure and actual resources at programme level. For example, only 40% of reported expenditure on supplementary nutrition could be accounted for in service delivery, and a large

proportion of funds intended for supplementary nutrition were siphoned off, which highlights the absence of a results-oriented monitoring mechanism in ICDS.

Adequate interdepartmental cooperation has also been a challenge for ICDS, especially coordination among providers of complementary services such as health facilities and water and sanitation. Finally, delivering on the core goals of ICDS has been hampered by inequities in access. The *Anganwadi* model is celebrated for being able to reach remote and marginalised communities, led by local women who are respected within the community. But overall the states with the greatest need for the programme, the poor northern states with high levels of child malnutrition, have the lowest programme coverage and the lowest budgetary allocations from the central government (Programme Evaluation Organisation, 2011; Lokshin et al., 2005).

In conclusion, DESI (2010) calls for evaluation of the trade-off between *“Universalization with thin spread of inadequate resources”* and *“targeting ICDS to the needy with quality public spending and effective implementation.”*

2.2 Building effective integrated ECD systems

The pioneer example of ICDS offers evidence of what can be achieved, as well as the challenges. Many other comprehensive integrated programmes are reviewed in this Topic Guide, including ambitious reforms initiated by governments. But central government-driven, system-level reforms are only one starting point. Identifying more modest sectoral ‘entry points’ and effective delivery platforms for more integrated services may pragmatically achieve ‘quicker wins’ than full-scale integration reform, as will become clear in later sections.

There is scope for more localised and modest innovation, especially in countries where policy engagement is relatively recent, with infrastructure and capacity gaps, in terms of service delivery systems, professional and para-professional training, etc. Many priorities for integrated ECD are in relatively low resource, but high need contexts, where populations are large (and may be widely dispersed), governance systems can be relatively weak and professional capacity scarce. Governance, resourcing and logistic challenges can result in a patchwork of provision, made more complicated by the co-existence of multiple providers, from the state, NGO and private sectors. One of the consequences is *“...a wide gap in enrolment between the richest and the poorest...Part of the reason is that governments have yet to assume sufficient responsibility for pre-primary education: as of 2011, private providers were catering for 33% of all enrolled children”* (UNESCO, 2014, p.2).

Governance weaknesses can have serious consequences in terms of equity in access and quality, representation of girls and boys, the most disadvantaged children, ethnic minorities and isolated communities, and inclusion of children with special needs.

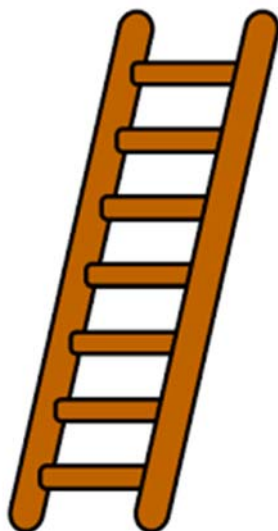
“In recent years, in spite of the expansion of services for young children and families, many of which have been accompanied by rigorous evaluations demonstrating effectiveness, a majority of the world’s youngest children still lack access to quality early childhood development (ECD) services. This is due in part to poor systems-level coordination, and sometimes to the chaotic and unsystematic approaches used to scale up programs. It is the capacity or ability of the system, therefore, that creates the opportunity to achieve desired outcomes. Understanding the operations, strengths, and

feasible entry points of ECD systems can help to ensure more effective service delivery, sustainability, and scalability.” (Britto et al., 2014, p. 245)

In summary, the goal of achieving more integrated ECD systems can be articulated in terms of relatively modest objectives that involve specific community-based innovations, or initiatives that encourage greater collaboration amongst policymakers, service providers and professionals concerned with ECD (WASH, nutrition, health, education, social protection etc.).

Figure 4 depicts some steps towards more integrated ECD as rungs on a ladder, with the extent of integration varying from very modest ‘softer’ coordination (e.g. inter-professional communication and sharing) through to much ‘harder’ integration (e.g. physical and organisational merger), and ultimately fully-integrated ECD systems from global and national policies through to service delivery.

Figure 4: Rungs of an integrated ECD ladder



5. Full integration of governance, finance, service delivery, training etc.; at all levels through to service users, led by national policy and/or lead ministry

4. Partial integration, joint policies and/or combined services, including national, municipal or community-based initiatives

3. Active inter-sectoral collaboration e.g. via joint planning office, shared training, quality standards, inspections, etc.

2. Basic coordination of roles, goals and delivery, with effective inter-sectoral communication at ministry and municipal levels

1. Sector based services with minimal connection between policies, services, professionals, etc.

0. Fragmentation amongst sectors and providers at all levels.

Figure 4 is a useful starting point, although in practice, operationalising integration is rarely so uni-dimensional or straightforward, for several reasons:

Integrated ECD is not ‘a one size fits all’.

Operationalising a more ‘joined up’ ECD approach can take many different forms. Evaluation strategies should not assume there is a single most cost-effective way to deliver ECD, nor that full integration is realistically attainable, nor necessarily even considered desirable in societies that value local innovations, and community initiatives that may not fit neatly into a uniform, centrally-controlled ECD system.

Integrated ECD rarely starts from a ‘blank canvas’.

Unless there is strong political engagement and consensus, it can be challenging to carry out ‘root and branch’ reform towards integration within systems that are founded in strong sectoral and professional traditions and infrastructures, each linked to strong organisational and budgeting hierarchies from central government through to local provider. More modest, pragmatic steps towards ‘joined up’ services may be more realistic.

Integrated ECD systems are ‘complex and context specific’.

While general principles and key indicators are transferable, any ‘integrated ECD toolkit’ will need to be adapted case by case. Cautionary lessons can be learned from the well articulated parallel field of ‘integrated care systems’:

“... Understanding outcomes... is like a ‘multiple simultaneous equation’ – it requires appreciation and consideration of the combination of factors that occur at multiple levels, over time, and in different contexts. Generating transferable and practical lessons for future strategies in different country contexts requires an appreciation of this complexity.” (Goodwin and Ferrer, 2013, p.1)

On a more positive note, low- and middle-income countries with shorter histories of ECD programming may be at an advantage and more open to exploring innovative and sustainable approaches to service development, delivery and evaluation. For example, Colombia adopted a national integrated care strategy for ECD in 2010 known as *De Cero a Siempre* (From Zero to Forever), which is led by the office of the President and backed by a ‘Decree for Comprehensive ECD’ and administered via an inter-sectoral commission (World Bank, 2013). Vargas-Baron (2013) discusses building national ECD systems.

Sections 3, 4, 5 and 6 of the Topic Guide look in more detail at sectoral and age specific entry points for more integrated ECD, based around both traditional and more innovative delivery platforms and including examples of comprehensive national programmes, as well as smaller scale initiatives. Section 7 revisits the concept of more holistic ECD and offers ten general conclusions relevant to planning for more integrated – or at the very least more coordinated – ECD services.

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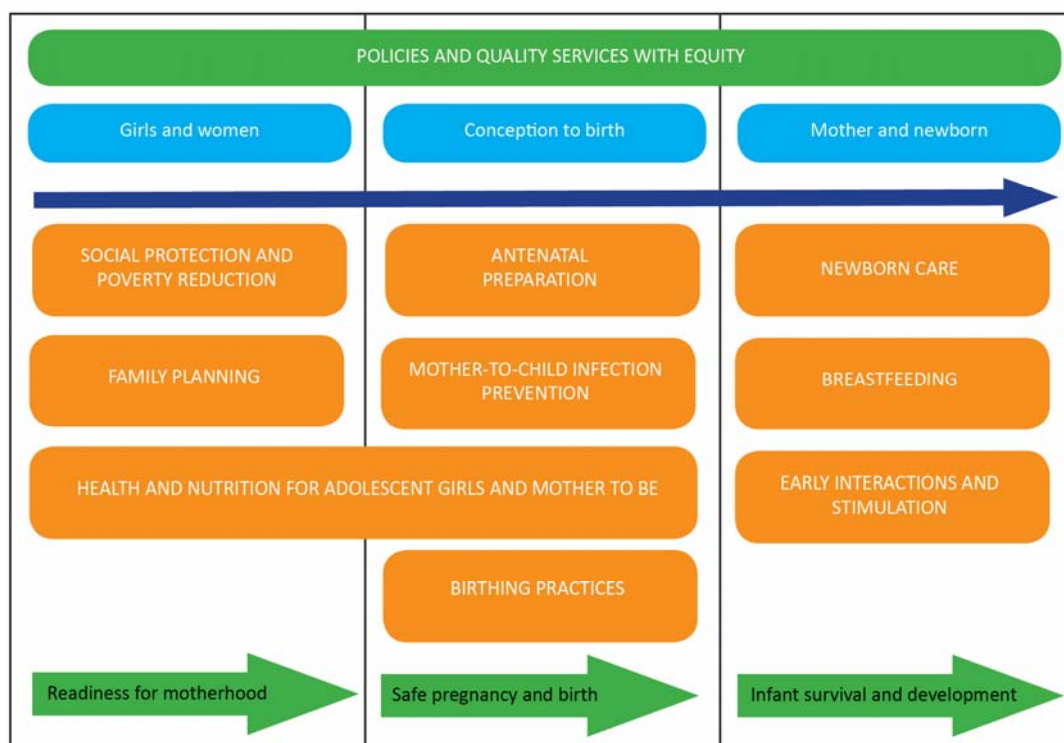
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Section 3. Before conception to birth

Figure 5: Before conception to earliest infancy – interventions for the mother, father and newborn



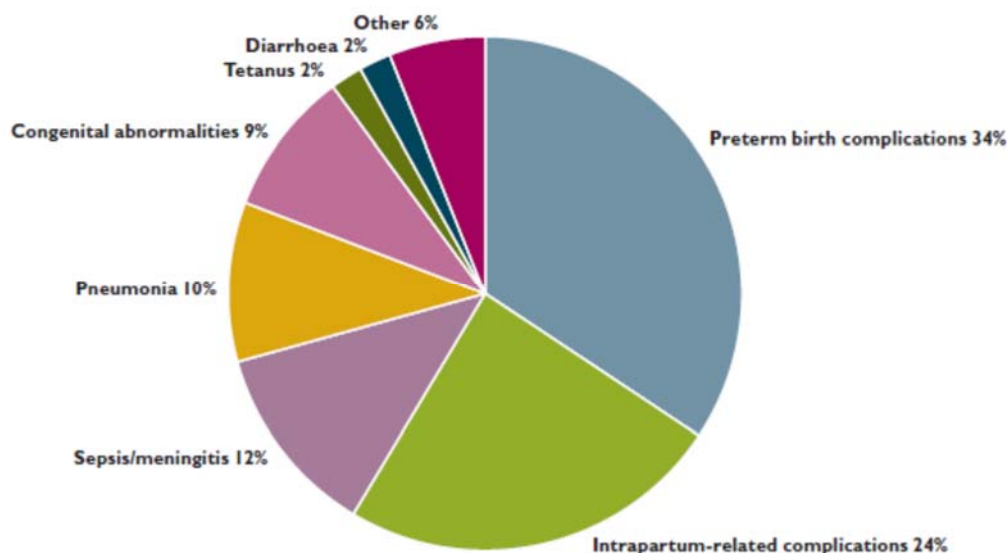
The ‘critical period’ for ECD begins long before the infant is born, and arguably, even before the infant is conceived. A comprehensive framework extends to the health, well-being, readiness and ultimately, the survival of the mother as well as father and/or other caregivers on whom the newborn infant(s) will depend: to survive, thrive and develop (or otherwise) throughout their childhood and beyond. A comprehensive framework also takes into account the cultural context, belief systems and behavioural patterns that shape the ways birth is prepared for and anticipated, including the birth of an infant girl versus boy.

Beginning this Topic Guide by focusing on the mother before and during pregnancy is an important extension of the scope of a holistic ECD, which conventionally begins at birth. Focus on the young woman and mother-to-be should be set within a life cycle and gender-based analysis of family, social and economic systems as these can be reformed in ways that enable, empower and support parenting, and promote development of the next generation of girls and boys (Girl Hub, 2014; Taylor and Perezniето, 2014; Cornwall and Edwards, 2014).

This section includes the social protection available to the young mother; their preparation for pregnancy; health, nutrition and WASH risks and interventions during pregnancy, birth and earliest infancy; as well as the significance of early developmental stimulation and parent support, and the impact on neo-natal survival, growth and development. This section includes interventions through to the very earliest weeks of life. Section 4 picks up on these themes for the full period from birth to 2 years old. The significance of this earliest period is signalled by the campaigns around ‘the first 1,000 days’ (conception to the child’s second birthday) (1,000 days, 2014).

To date, the policy priority has been on maternal and child survival, health, and nutrition, with significant progress made in recent years (The Lancet, 2013). As under-5 mortality has reduced, so the proportion of child deaths that occur in the first month increased from 37% in 2000-3 to 41% in 2008, reinforcing the priority of effective interventions during this brief period (DFID, 2011). Latest figures estimate 44% of child deaths occur in the first month. Progress has been made in reducing these high levels of newborn mortality by 2% each year between 1990 and 2012 – from 33 to 21 deaths per 1,000 live births (Samarasekera and Horton, 2014). UNICEF global estimates are that 34% of deaths amongst newborns result from complications associated with pre-term births; 24% result from complications at labour and delivery, including birth asphyxia and a third of newborn deaths are due to infections acquired during delivery or after birth (Wright et al., 2014). The global statistics conceal significant diversity within as well as between countries, related to gender, poverty, urban versus rural location and other factors (see Figure 6).

Figure 6: Global distribution of deaths of newborns, by cause (2012)



Source: Wright et al. (2014), p. 9; citing: UNICEF (2013). *Committing to Child Survival: A Promise Renewed – Progress Report*. (Note: Due to rounding, percentages do not add up to 100).

Margaret Chan, Director General of the WHO, comments that, “the health sector... has a unique responsibility, because it has the greatest reach to children and their families during pregnancy, birth and early childhood,” (Chan, 2013). Health workers are well placed to implement many of the health, nutrition and WASH interventions during pregnancy, birth and earliest infancy, which are crucial to child survival and development.

Mother and infant survival and health are particularly important during this earliest phase, but survival is not sufficient, with all sectors having a role to play in promoting children’s holistic development:

“The agenda to improve child survival and health is indivisible from the agenda to improve ECD. That is, taking a developmental perspective on the early years provides a comprehensive framework of understanding that subsumes issues of survival and health.” (Irwin et al., 2007, p. 15)

The Lancet 'Every Newborn Series' from 2014, reinforces the message that these interventions for women, mothers, and newborn babies are best planned as a *"...continuum of care (pre-conception, antenatal, intrapartum, postnatal) and in the community"* (Samarasekera and Horton, 2014, p. 107).

Nine entry points for integrated ECD are identified for this earliest phase (see Figure 5):

- 1) social protection and poverty reduction
- 2) family planning
- 3) health and nutrition for adolescent girls and mothers-to-be
- 4) antenatal preparation
- 5) mother-to-child infection prevention
- 6) birthing practices
- 7) newborn care
- 8) breastfeeding
- 9) early interactions and 'stimulation'.

3.1 Social protection and poverty reduction

Biological and psychosocial risk factors associated with poverty lead to marked inequalities in ECD (Walker et al., 2011). These risks begin long before the baby is conceived, notably affected by the education levels; the living conditions of young women; livelihoods and household poverty levels; risks and shocks; and access to information and services. Data from 66 developing countries show that child mortality rates for under-5s among the poorest 20% of households are almost double those in the richest 20%. In all countries with relevant data, child mortality rates are highest in households where the education of the mother is lowest (WHO, 2009a). The poorest women are generally least likely to access healthcare services. For example, women in the poorest households are least likely to have a skilled birth attendant with them during childbirth (WHO, 2009b). Adolescent pregnancy is more common in adolescents who live in poverty and in rural areas, and it is more likely to occur among the less educated. Perinatal deaths are 50% higher among babies born to mothers under 20 years of age than among those born to mothers aged 20–29 years, and babies of adolescent mothers are more likely to be of low birthweight (WHO, 2008).

Social protection programmes can alleviate the impact of poverty on pregnant women directly, through cash transfers, as well as through providing antenatal preparation and other services. Britto et al. (2013) review the potential of social protection within an integrated strategy (see also Attanasio et al., 2005; Macours et al., 2012). One long-standing and well researched example is Oportunidades in Mexico (see Case Study 2).

Case Study 2: Oportunidades, Mexico

Oportunidades is a large-scale Federal programme, introduced in 1997. It combines conditional cash transfers with coordinated health, nutrition and education interventions. Beneficiary families are identified through a socio-economic and demographic survey, which screens families' poverty conditions and vulnerability. Major components of the programme are:

- Direct cash transfers, which increase household income by 20-30%, are paid every two months to the female head of household. These transfers are conditional on children attending school; family members accessing preventative medical care and attending communal educative self-care workshops. Evidence indicates that families use about 70% of their payments on improved diets, including more meat, fruit and vegetables. They also invest in farm animals.
- For pregnant women, one condition of cash transfers is attendance at five prenatal visits to monitor the pregnancy's progression – and prevent, detect and control obstetric and perinatal risk factors. They are required to attend meetings about prenatal care, maternal nutrition and reproductive health and receive milk-based nutritional supplements.
- Nutritional supplements are provided for all infants between 6 and 23 months old, undernourished children between the ages of 24 to 59 months old, and pregnant or breastfeeding women.
- Educational grants are provided for school age children. Families receive about 13% more for keeping a girl in middle and high school than a boy, because fewer girls traditionally stayed in school beyond the elementary grades. The grant amount also increases with the child's grade, as the family are potentially losing the child's earnings by sending them to school.
- Records from health centres and schools are used to monitor whether families are meeting their 'co-responsibilities'.

In 2012, the budget granted to Oportunidades by the federal Government was 70 thousand million pesos (approximately US\$5.3 billion dollars). The programme's cost of operation is less than 5 cents of each invested peso, including the cost of cash transfer. Oportunidades benefited 5.8 million families in 2012.

An evaluation of the programme from 1997-2007 (Government of Mexico, 2012) identified a range of cross-sectoral outcomes:

- Anemia incidence for children under 2 years was reduced from 61% to 35.8%.
- The prevalence of low height for under 2s was reduced from 35% to 23.9%.
- Children under 2 showed less general morbidity than those who were not in the programme (35.5% vs 39.9%).
- There were lower rates of teenage pregnancy among women whose families had been part of the programme over a long period.
- Sexually-reproductive beneficiary women 15 to 49 years old increased their use of birth control from 36% in 1998 to 57% in 2007.
- Children up to 3 years old showed fewer social-emotional and behavioural problems and greater language and speech development skills.
- An increase of 10 percentage points on mathematics achievement was observed for Oportunidades' beneficiaries (1998-2003).

- Girls and female teenagers obtained better school results, compared to male beneficiaries for elementary and junior high school levels, for both mathematics and Spanish.

Barber and Gertler (2008) reported a study of 840 women which found that participation in Oportunidades predicted birthweight 127.3g higher and a 4.6% decrease in the odds of having a low birthweight baby compared to a control group. Fernald et al. (2009) conducted a study of the effect of Oportunidades on child growth, cognition, language and behaviour after 10 years. They found that the amount of cumulative cash that had been transferred to households during their participation in the programme was significantly associated with children having higher verbal and cognitive scores; height- for-age scores and reduced behavioural problems at ages 8-10 years.

Oportunidades was one of the first nationwide programmes of this kind, and the principles have been widely replicated, especially within Latin America. Currently, the largest coverage conditional cash transfer programme is Bolsa Familia in Brazil (Lindert, 2006).

3.2 Family planning

One specific strategy to combat the impact of poverty on child development is improving access to family planning. Effective family planning can reduce pregnancy rates amongst adolescents living in poverty and encourage later first pregnancies. Having fewer, healthier children can reduce the economic burden on poor families and allow them to invest more in each child's care and schooling, helping to break the cycle of poverty (UNFPA, 2005). Spaced births and fewer pregnancies improve child survival and health. Babies are more likely to be born prematurely, have low birthweight, be small for gestational age, die in infancy, and suffer from malnutrition when they are closely spaced (Norton, 2005; Rutstein, 2005; Zhu, 2005). Short birth intervals may also harm older siblings by reducing the duration of breastfeeding (Marston and Cleland, 2004). See the HEART Topic Guide on Family Planning (Cleland et al., 2014). Breastfeeding for longer is also likely to increase birth spacing as ovulation is delayed (Howie and McNeilly, 1982).

3.3 Health and nutrition for adolescent girls and mothers-to-be

Maternal undernutrition impacts the infant's birthweight, and may affect growth and development. Between 10-19% of women are affected across low- and middle-income countries. A woman's body-mass index and weight gain during pregnancy predicts the birthweight of their infant. Infections, such as malaria, and high blood pressure can also affect birthweight (Hendrix and Berghella, 2008). In low- and middle-income countries, 16% of births are low birthweight with rates as high as 27% in south Asia, most of these births being intrauterine growth restriction (IUGR). IUGR is associated with early developmental risk (Walker et al., 2011). For example, a Guatemalan study showed associations between birth size adjusted for gestational age and development at 6 and 24 months (Kuklina et al., 2006). Evidence for longer-term effects of IUGR on cognitive and social skills is less consistent (Walker et al., 2011).

Recent research points to specific epigenetic pathways from maternal nutrition at the time of conception through to long term development via 'fetal metabolic programming'. Much of

the evidence relies on animal research (Wu et al., 2004) but one study investigated the consequences of predictable seasonal variation amongst communities dependent on own-grown foods in rural Gambia. Dominguez-Salas et al. (2014) were able to link indicators of food availability for mothers-to-be to DNA extracts from hair follicles of their infants, demonstrating that maternal nutritional status during early pregnancy caused persistent and systemic epigenetic changes in babies, with potential long-term consequences for health and development (Hivert et al., 2013).

Bhutta et al.'s (2013) review of maternal nutrition interventions recommends folic acid, multiple micronutrient, calcium and balanced energy-protein supplementation for pregnant women and women of reproductive age. Balanced energy-protein supplementation of pregnant women benefits birthweight and reduces births that are small for their gestational age. Analysis of 12 randomised controlled trials from low- and middle-income countries show that supplementation with multiple micronutrients in pregnancy leads to increased birthweight (Walker et al., 2011). Trials of supplementation with multiple micronutrients during pregnancy in Bangladesh, and in pregnant women infected with HIV in Tanzania, suggest small benefits to infants' motor development (Tofail et al., 2008; McGrath et al., 2006; Li et al., 2009).

3.4 Antenatal preparation

Antenatal services can address many of the factors that impact upon infant survival and development by detecting and addressing obstetric risks during pregnancy; providing important health and nutritional interventions, and educating mothers in antenatal and newborn care. A systematic review of 18 trials of community-based intervention packages of antenatal and newborn care, reported a 24% overall reduction in deaths of newborns. These studies were mostly conducted in developing countries including India, Bangladesh, Pakistan, Gambia, Nepal and Indonesia. A significant impact on newborn deaths was found for community support/women's groups that focused on antenatal education and preparedness for newborn care; and for packages including home visits by community health workers; community mobilisation and education strategies. Interventions delivering antenatal newborn care and breastfeeding education to mothers doubled rates of initiation of breastfeeding (Lassi et al., 2010; Dyson et al., 2005).

3.5 Mother-to-child infection prevention

HIV infection affects brain development, leading to cognitive impairments. Detrimental effects of HIV infection on neuro-cognitive development were identified in 36 of 43 studies from low-income, middle-income, and high-income countries (DFID, 2011). Studies of the development of children younger than 5 years infected with HIV from low- and middle-income countries show they have significantly lower motor and mental development scores (Walker et al., 2011).

Health workers can implement interventions to prevent mother-to-child transmission (PMTCT) of HIV during pregnancy, labour and the immediate newborn period (Wright et al., 2014; WHO, 2014).

Preventative measures such as maternal tetanus immunisation and screening and treatment for syphilis can reduce the risk of newborn death due to infection. Postnatally, health workers'

early identification of severe infections and treatment with antibiotics dramatically increases survival chances (Wright et al., 2014).

3.6 Birthing practices

Birth and the first 24 hours after birth are the most dangerous for both child and mother – accounting for almost half of maternal and newborn deaths. More than 40% of maternal deaths (total about 290,000) occur around the time of birth (Samarasekera and Horton, 2014). Every year, 2.6 million infants are stillborn and a further 2.9 million babies die from largely preventable causes during the first 28 days. The highest numbers of newborn deaths per year are in South Asia and sub-Saharan Africa, with India (779,000), Nigeria (267,000) and Pakistan (202,400) leading. Rwanda – alone among sub-Saharan African countries – halved the number of newborn deaths since 2000.

WHO and UNICEF launched an ‘Every Newborn Action Plan’ in 2014 (WHO/UNICEF, 2014), building on the most recent evidence (Lawn et al., 2014). Safe birthing practices can prevent maternal and newborn deaths, with skilled care from midwives or other health professionals. They can prevent newborn deaths due to complications during delivery by monitoring foetal heart rate and signs of distress in labour; providing assisted delivery and caesarean section if needed, and resuscitating newborns with difficulty breathing at birth (Wright et al., 2014).

Adequate access to water and hygiene is very important as a means to ensure safe delivery and to prevent infection and sepsis. In a study from Nepal, maternal and birth attendants’ hand-washing behaviour was strongly associated with infant survival (Rhee et al., 2008). In a review on the effect of hygienic birth practices Blencowe et al. (2011) found evidence for a strong effect on tetanus and sepsis affecting newborns.

3.7 Newborn care

Health workers play a crucial role in supporting the care of newborns, and ensuring intervention and referral where necessary. While both lay and professional workers have a role to play, The Lancet 2014 series on midwifery (The Lancet, 2014) draws attention to potential for professional midwives to serve as ‘the essential link in the continuum of care’ which begins with family planning, includes birthing as well as newborn care:

“...the midwife addresses the continuum of care from the community through to complex clinical care whereas the medical specialist may not. Midwives are potentially the facilitators—the essential link—to bring the woman into the health-care system at the most effective and efficient time and level. Effective referral is often hampered by practical considerations such as lack of finance, transport services and lack of services and access to specialist medical care once in higher-level facilities. Again, this highlights the need for midwifery, and midwives more specifically, to be situated as part of a team within a functional and enabling health system that has a skilled health workforce with the appropriate competencies, and is based in the community as well as in the hospital or health facility.” (Renfrew et al., 2014, p. 7)

Early newborn care is crucial to reducing the risks of morbidity affecting long term development, for example, delayed treatment of asphyxia leading to permanent brain impairment; untreated retinopathy of prematurity leading to impaired vision/blindness; inappropriate dosing of premature newborns with oxygen leading to the same risk; premature

babies not receiving antenatal corticosteroids leading to impaired lung development. The authors of a Lancet series paper on newborn health note:

“The first worldwide burden estimates of neonatal morbidities have drawn attention to 19 million neonates with life-threatening conditions (including intrapartum related brain injury, severe bacterial infection, pathological jaundice, and preterm birth) who need specific and special care, many of whom do not receive even basic warmth and feeding support.” (Lawn et al., 2014, p. 10)

Kangaroo Mother Care (KMC) is a low cost, low technology intervention for strengthening infant care that has proven effectiveness in low-resource contexts (see Case Study 3).

Case Study 3: Kangaroo Mother Care (KMC)

Mothers/caregivers provide skin-to-skin contact for low birthweight infants (under 2,500g) by carrying the babies in upright positions. The mothers are used as ‘incubators’ to maintain the infants’ body temperature and as the main source of food and stimulation while they mature enough to face extrauterine life in similar conditions as those born at term. Exclusive or nearly exclusive breastfeeding and attempt of early discharge from hospital are also prioritised. This intervention is used in many low- and middle-income settings in which resources (e.g. incubators) are limited (Irwin et al., 2007).

A Cochrane Review of randomised controlled trials of Kangaroo Mother Care found that: *“Kangaroo mother care (KMC) is an effective and safe alternative to conventional neonatal care for low birthweight (LBW) infants mainly in resource-limited countries.”* (Conde-Agudelo and Díaz-Rossello, 2014, p. 2)

Compared with conventional neonatal care, KMC was found to reduce:

- mortality at discharge or 40-41 weeks’ postmenstrual age and at latest follow up
- severe infection/sepsis
- nosocomial infection/sepsis
- hypothermia
- severe illness
- lower respiratory tract disease
- length of hospital stay.

KMC was found to improve outcomes for mother and baby:

- increased weight
- head circumference
- length gain
- breastfeeding
- mother satisfaction with method of infant care
- some measures of maternal-infant attachment
- some measures of quality of home environment.

The studies in the review included a range of low- and middle-income countries: India, Malaysia, Indonesia, Madagascar, Ethiopia, Mexico, Columbia and Ecuador. Evaluations show that KMC use is also effective in high-income settings, suggesting that skin-to-skin care may

have advantages over incubators even where cost is not such a significant issue (Renfrew et al., 2009).

The website for research and resources on kangaroo care is available here: <http://skintoskincontact.com/home.aspx>

3.8 Breastfeeding

Midwives, and other trained health workers, both professional and lay, can help women to establish exclusive breastfeeding which is widely considered good practice, wherever feasible. Breastfeeding reduces the risk of infection (Wright et al., 2014) and fosters strong maternal-infant attachment, as well as providing a natural context for early interactions. Early feeding is an intimate opportunity for early ‘dialogue’ initiated by the infant as well as by the mother, and providing strong foundations for emotional, social, language and cognitive development (UNICEF, 2013). The potential for linking infant nutrition goals with wider ECD goals is elaborated in Section 3.9.

A systematic review showed that professional and lay support for breastfeeding women is effective (Dyson et al., 2005). For example, a large cluster-randomised trial in Belarus which implemented breastfeeding promotion increased the rates of exclusive breastfeeding at 3 months and any breastfeeding up to 12 months. At age 6.5 years, intervention children had significantly higher scores on verbal and full-scale IQ and teacher ratings for reading and writing (Kramer et al., 2008). Health workers can support the mothers of premature and underweight babies to establish exclusive breastfeeding and to keep the baby warm through skin to skin contact. An effective technique for this is Kangaroo Mother Care (see Case Study 3).

3.9 Early interactions and ‘stimulation’

The focus of interventions in the period after birth has typically been on health and nutrition, and where infants are being screened as special needs or at risk in other respects. But early breastfeeding, nurturing and care are also the contexts within which infants, mothers and others establish positive relationships, including engaging in early interactions, which foster emotional security, brain development and early learning. While interventions are sometimes described in shorthand as ‘infant stimulation’, which may be appropriate for low birthweight infants (Walker et al., 2010), decades of research suggest a more nuanced understanding of early learning processes, involving early emergence of mutually engaging mother-infant interactions. Babies typically seek out stimulation via facial expressions, sounds and gestures, as much as their mothers (or other caregivers) are providing stimulation (Schaffer, 1996). More recently, the concept of ‘serve and return’ interactions has been used to emphasise that early development is a two-way process within which the normally functioning infant is actively engaged from the beginning of life in seeking out developmentally-appropriate interactions and experiences (Center on the Developing Child, 2011; see also age phase 0-2, Section 4.6).

There is evidence that supporting mothers to interact with their low birthweight and premature babies has an especially positive impact on their development. In India, mothers

of 800 at-risk infants (75% low birthweight, premature, or both) were randomly assigned to receive training to provide stimulation at home over 12 months. Following intervention, children's mental development and psychomotor development scores were significantly higher than the control group at both 12 months and 2 years (Nair et al., 2009).

In Jamaica, 109 low birthweight, term-born children were randomised at birth to a psychosocial intervention or control group. The intervention was delivered during weekly home visits by community health workers, for the first 8 weeks and again from 7 to 24 months. In the first phase, visits focused on improving the mothers' responsiveness to their infants. Mothers were encouraged to 'converse' with their infants, respond to their cues, show affection, and focus their attention on the environment. The second phase focused on play techniques and positive interaction. At 6 years, the intervention group had higher IQ, higher visual-spatial memory scores and fewer behavioural difficulties than children in the control group (Walker et al., 2010).

Case Study 4: Support for women with newborns

A systematic review of seven cluster randomised controlled trials in rural, low-resource settings in Bangladesh, India, Malawi and Nepal, covering a total of 119,428 births, found that participatory women's groups were associated with a 23% reduction in neonatal mortality. The groups aimed to increase appropriate care-seeking (including antenatal care and institutional delivery) and appropriate home prevention and care practices for mothers and newborns. They used a participatory learning and action cycle which included four phases:

- 1) identifying and prioritising problems during pregnancy, delivery and post-partum
- 2) planning locally feasible strategies to address priority problems
- 3) implementing the strategies
- 4) assessing the activities.

Women's group facilitators were local women who were not health workers. They received 7-11 days of basic training in maternal and newborn health and participatory facilitation techniques. The trials that reported the behavioural mechanisms through which the birth outcomes may have been achieved, reported effects on health, nutrition and WASH behaviours. Significant effects were reported on clean delivery practices for home deliveries, especially hand-washing and use of clean delivery kits; exclusive breastfeeding for at least the first 28 days and uptake of antenatal care. Although the cost per neonatal death differed widely between trials, according to WHO-recommended standards, participatory women's groups were a highly cost-effective intervention (Prost et al., 2013).

There is also evidence that psychosocial interventions in high risk and unstable contexts can improve infant development. A study in northern Uganda offered mother and baby group sessions and home visits for mothers, which led to improved infant stimulation and maternal mood. Mothers in the intervention group had greater involvement with their babies, more availability of play materials, and less sadness and worry at follow-up (Morris et al., 2012).

3.10 Summary for age phase 'Before conception to birth'

During the period before conception to earliest infancy:

- Family planning and social protection strategies can help to alleviate the impact of poverty on ECD.

- Antenatal services can provide a range of interventions to address maternal nutrition and health during pregnancy, which have a powerful impact on child survival, growth and development.
- Skilled care at birth and hygienic birth practices can prevent newborn deaths.
- Establishing and maintaining breastfeeding is important, especially exclusive breastfeeding for the first six months with breastfeeding continuing thereafter with appropriate weaning foods.
- Parents' early stimulation of low birthweight or premature infants may have positive effects on their development.

Table 2: Evidence strength assessment for 'Before conception to birth'

Quality of evidence:	Size of body of evidence:	Consistency of results:	Context
High	Medium/Large	Consistent	Global

3.11 References for Section 3

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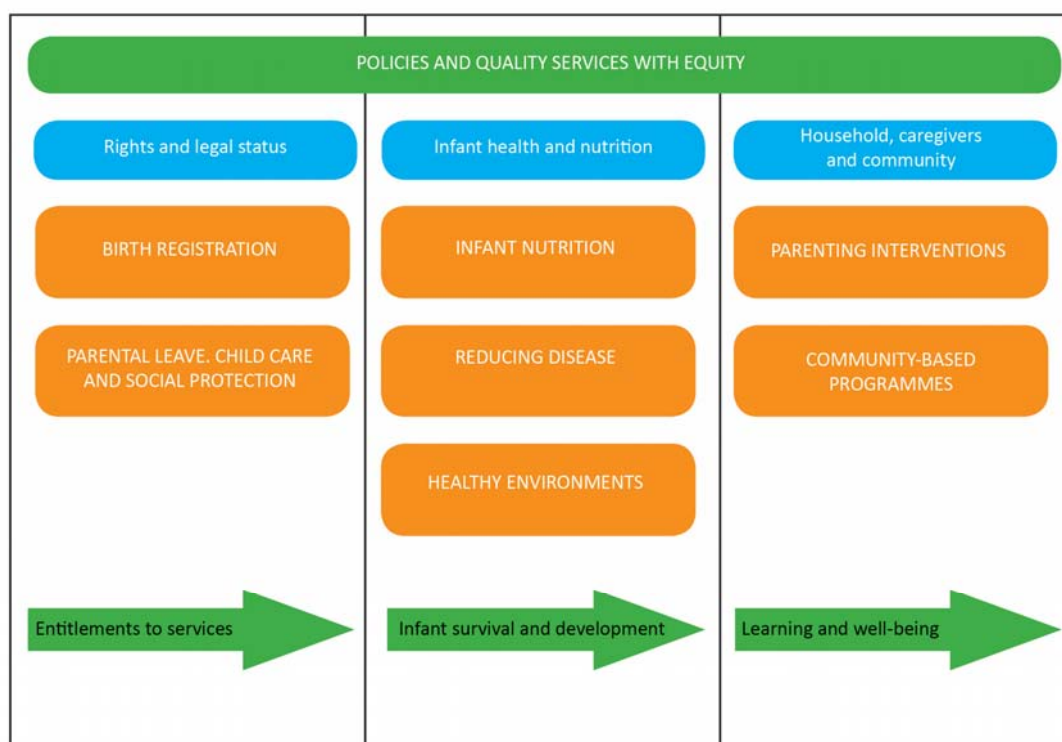
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Section 4. From birth to 2 years (infancy)

Figure 7: Birth to 2 years – interventions for parent and infant



A healthy environment, support for parents, good infant nutrition and developmental checks all build on the ingredients identified for the age phase ‘conception to birth’ in Section 3, as the foundation for physical and neurological, cognitive and social development. The emphasis of policy is traditionally on health, WASH and nutrition, but fostering positive relationships, attachment and providing opportunities for early play and learning are also crucial at this stage, and research points to the benefits of integrated delivery platforms, notably combining nutrition interventions with support for parents in promoting play-based learning (Black and Dewey, 2014). Interventions specifically targeting mothers and infants within their household and community are best framed against broader social policy that includes social protection, as at the age phase ‘conception to birth’ (and indeed at all age phases).

Specific entry points in this section are:

- 1) birth registration
- 2) parental leave, childcare and social protection
- 3) infant nutrition
- 4) reducing disease
- 5) healthy environments
- 6) parenting interventions
- 7) community-based programmes including day care.

4.1 Birth registration

Birth registration is a first step to ensure entitlement and access to basic services for all children (girls and boys, disadvantaged and minority groups). In their guidance to States parties the UN Committee on the Rights of the Child affirm:

“...The Committee notes that provision for registration of all children at birth is still a major challenge for many countries and regions. This can impact negatively on a child’s sense of personal identity and children may be denied entitlements to basic health, education and social welfare. As a first step in ensuring the rights to survival, development and access to quality services for all children (art. 6), the Committee recommends that States parties take all necessary measures to ensure that all children are registered at birth. This can be achieved through a universal, well managed registration system that is accessible to all and free of charge.” (UN Committee on the Rights of the Child, 2005, article 25)

It is estimated that in 2007, about 51 million children’s births were not registered, about half of them in South Asia (Engle et al., 2011).

The impact of strengthening birth registration systems is highlighted by the example of Democratic Republic of the Congo. The 2010 UNICEF Multi Indicator Cluster Survey (MICS) revealed that only 28% of births had been registered. UNICEF report that *“action plans developed and implemented with community involvement led to a surge in birth registration – in one district, from 6% in June 2012 to 41% in December 2012. Pregnant women also benefited from this community based initiative: 58% received at least four antenatal care visits, up from 16% six months earlier”* (UNICEF, 2014, pp. 10-11).

4.2 Parental leave, childcare and social protection

The quality of care available during infancy is crucially dependent on the time and capacities of parents (especially mothers) to provide that care, with financial and psychological security. In many contexts, early childhood programmes respond to family demand for childcare as much as to young children’s need for quality spaces that promote healthy development and learning whether in domestic settings or in a preschool centre. Childcare policies and services are strongly shaped by employment opportunities (and constraints) for mothers with newborns through to school age, and their entitlements to paid (or unpaid) parental leave (for both mothers and fathers). Realities of the childcare economy are also conditional on poverty levels, resources to pay childcare fees, informal household or community-based childcare traditions (e.g. by grandparents, extended family, or childminders) and the ability of mothers to negotiate decisions about their (and their children’s) well-being.

In these respects, the well-being of children is closely tied to legal and policy frameworks to promote gender equity and women’s labour market participation, availability of parental leave, adequate social protection, and availability of quality childcare. In a review of Latin America, Pautassi and Rico note:

“The regulation of childcare in labour laws or codes tends to be limited to the protection of working mothers during pregnancy, childbirth, postpartum and breastfeeding, but does not consider the child-rearing and care needs of children at this stage. It also disregards or minimizes men’s responsibility for their young children. Legislation thus shows heavy gender biases and the measures adopted do not necessarily consider the needs of care receivers. Crucially, labour regulations are targeted: they exclude from the respective benefits anyone who is not a formal-sector waged worker, to the detriment of informal-sector, independent, part-time and rural workers—and their children. Special mention is warranted by domestic service —the foremost economic activity among poor

women— since these workers receive discriminatory treatment in much of the region.” (Pautassi and Rico, 2011, p. 5)

Entry points for empowering women and strengthening children’s development during the earliest months and years involve ensuring mothers, fathers and others are able to balance quality care with adequate livelihoods. In life cycle analyses, households are generally at their poorest when children are at the youngest phase of life (Dornan and Woodhead, 2014 forthcoming).

Early childcare services are expanding rapidly in low- and middle-income countries, but they are highly variable in quality, resourcing and regulation. At best, they can be an important entry point for delivering quality ECD, which can take the form of family day care, children’s centres or workplace nurseries (Hein and Cassierer, 2010).

Social protection measures (already discussed in Section 3) are also important for this age phase. For example, an evaluation of the Child Support Grant, introduced in South Africa in 1998, concludes:

“...Child Support Grant (in the first two years of life) increases the likelihood that a child’s growth is monitored and improves height-for-age scores for children whose mothers have more than eight grades of schooling. Since children’s cognitive development depends on receiving appropriate nutrition in the first few years of life, this result provides important evidence of the Child Support Grant’s role as an investment in human capabilities – a critical determinant of multi-dimensional poverty reduction. This also suggests that a mother’s education complements the Child Support Grant in strengthening important impacts.” (DSD, et al., 2012, p. 105)

4.3 Infant nutrition

In the period from birth to 2 years, promoting good nutrition for all girls and boys is vital to prevent stunting and promote healthy growth and development. Bhutta et al.’s (2013) review of nutrition interventions that are effective in reducing child mortality recommends promotion of exclusive breastfeeding, complementary feeding, vitamin A supplementation, preventative zinc supplementation and management of moderate and severe acute malnutrition for infants and children.

Stunting is estimated to affect 34% of children younger than 5 years in low- and middle-income countries and is associated with lower cognitive ability, education outcomes (Glewwe et al., 2001) and poorer adult economic outcomes. Timing of growth faltering may be important. In Guatemala, growth and development were related up to age 24 months but not from 24 to 36 months (Kuklina et al., 2006). Five longitudinal studies identified that an increase in weight gain from birth to 24 months was associated with increased schooling and reduced grade failures, whereas growth from 2 to 4 years had little effect (Martorell et al., 2010). While policy correctly emphasises early nutrition, recent evidence also draws attention to the scope for catch up by initially-stunted children, as well as the risks of growth faltering in middle childhood (Fink and Rockers, 2014).

Breastfeeding remains the single most effective intervention to improve infant and young child nutrition (see also Section 3). The WHO recommends six months of exclusive

breastfeeding and up to two years of continued, partial breastfeeding (Meeker et al., 2013). There is good evidence for the benefits of breastfeeding to development and educational attainment. In Brazil, boys breastfed for at least 9 months attained 0.5-0.8 school grades more by 18 years than boys breastfed for less than one month (Victora et al., 2005).

Reducing micronutrient deficiencies is a specific priority for infant nutrition. Globally, deficiencies of vitamin A and zinc were estimated to have resulted in 157,000 and 116,000 child deaths respectively in 2011; deficiencies of iodine and iron, together with stunting, can contribute to children not reaching their developmental potential (Black et al., 2013). Studies in Chile, India and Mexico identify evidence of delayed brain maturation in infants with iron-deficiency anaemia. Additional evidence shows poorer cognitive, motor, and social-emotional development associated with iron-deficiency anaemia in infancy, or the preschool period (Walker et al., 2011). Randomised controlled trials of macronutrient supplementation to promote better growth consistently show concurrent developmental benefits. Follow-up of a cluster randomised trial in Guatemala showed benefits to reading comprehension and reasoning at 25-42 years in participants supplemented from birth to 24 months, but not those supplemented later (Stein et al., 2008). While these findings point to the first 1,000 days as a critical window, later nutritional supplementation can also bring benefits (Singh et al., 2014; Section 6.7).

Providing nutrition information and support to parents is an important pathway to improved nutrition, and multiple benefits, as demonstrated in a randomised controlled trial with 2,500 women distributed across 24 other sites in Malawi. The study was linked to an established home visiting programme in central Malawi called MaiMwana ('Mother and Child'), delivered at relatively low cost by local 'peer counsellors' with personal experience of infant nutrition. The study demonstrated that a sustained intervention during the earliest years improved mothers' knowledge, translated into improved household nutrition and delivered improved child growth. Interestingly, the greater awareness of the importance of nutrition appeared to have a systemic impact on household functioning, such that parent employment rates increased to help pay for improved food consumption (Fitzsimons et al., 2014).

This study demonstrates intervention efficacy of nutrition awareness and support for poor families, although parenting and home visiting interventions for mothers and babies are often integrated within a social protection programme (see Sections 3.1 and 4.2) and/or involve broader child development interventions, including promoting early relationships, play and learning (Section 3.9; Section 4.6; Black and Dewey, 2014).

4.4 Reducing disease

Undernutrition has a pervasive impact on young children, undermining all aspects of their development, and leaving them more vulnerable to infectious diseases. The relationship between undernutrition and infectious disease is a vicious cycle: infections result in decreased dietary intake and malabsorption of nutrients, which leads to undernutrition, and undernutrition reduces children's resistance to infection, increasing the likelihood of them contracting infections and diminishing their ability to successfully fight these infections off (Katona and Katona-Apte, 2008).

Infectious disorders are the leading cause of child mortality, causing 64% of deaths in 2010. The most important single causes of death were pneumonia (18%), diarrhoea (10.5%) and malaria (7.4%) (Liu et al., 2012). Jones et al. (2003) showed that there are effective interventions for all the major causes of child mortality, including preventative interventions such as breastfeeding, vaccinations, insecticide-treated bednets and the availability of WASH as well as treatment interventions including antibiotics, antimalarials and oral rehydration therapies. Infectious disorders not only have an impact on child survival, but also on growth and development.

In many regions, malaria is a continuing risk. Cerebral or severe malaria can have serious neurological sequelae, including seizures, and language and cognitive deficits. In Uganda, cognitive training interventions improved the function of affected children (Bangirana et al., 2009). New evidence suggests that repeated uncomplicated attacks and asymptomatic parasitaemia (experienced by millions of children annually) also affect children's development (Walker et al., 2011).

Studies of the development of children younger than 5 years infected with HIV from low- and middle-income countries show they have significantly lower motor and mental development scores (Walker et al., 2011). A study of the use of highly active antiretroviral therapy in the Democratic Republic of Congo noted benefits to motor and cognitive development after one year, with greater benefits in younger children (Van Rie et al., 2009).

In South Africa, a randomised controlled trial of 122 children with HIV aged less than 2 years and 6 months assessed the effectiveness of a home-based stimulation programme. The programmes were individualised and were structured around play and activities of daily living. They included activities to promote motor, cognitive, and speech and language development. Outcomes were assessed at 6 months and 12 months. Children in the experimental group showed significantly greater improvement in cognitive and motor development over time than children in the comparison group (Potterton et al., 2009).

4.5 Healthy environments

WASH interventions are elaborated in this section, but are a priority for all age phases in the Topic Guide. They play an important role in creating healthy and safe environments for parents and young children in their homes, neighbourhoods and in due course in play spaces, preschools etc.

“Children’s material conditions, with their capacity to undermine health, well-being and opportunities for learning, constitute one of the major expressions of poverty. Hundreds of millions of children live in physical environments that fail to support their health, their optimal development and their well-being. At issue here is the adequacy of housing, the availability and quality of water and sanitation, drainage and waste removal, and the quality of neighbourhood conditions.” (Bartlett, 2012, p. 4)

The scale of the problem was highlighted by a study of child poverty in low- and middle-income countries (Gordon et al., 2003). Deprivation was defined in terms of the circumstances most likely to affect children's health and development. Most of these circumstances were related to their material conditions or their access to services. Half of the children in these countries were found to be seriously deprived on at least one count. Over a third lived in

dwellings with more than five people to a room or with mud floors; almost a third lacked access to any toilet facilities at all; while 20% lacked adequate access to safe water.

The impact of insanitary living conditions is illustrated by research into diarrhoea and other diseases. Studies in Brazil show associations between the number of diarrhoea episodes before age 2 years, late school entry and intellectual performance (Lorntz et al., 2006; Patrick et al., 2005). A multi-country study showed that each episode of diarrhoea in the first two years of life contributes to stunting, suggesting that associations between diarrhoea early in life and school age performance might be through the same processes that cause stunting (Checkley et al., 2008).

Studies of infants' faeces disposal practices have found that unsafe disposal increases the risk of diarrhoea by 23%, highlighting the importance of the safe disposal of infants' faeces (Mara et al., 2010). During weaning, good hygiene could help to prevent diarrhoea. A recent intervention study found both high baseline faecal contamination of weaning foods and large reductions in contamination following a targeted hygiene intervention (Cairncross et al., 2013).

An approach which integrates health, nutrition and cognitive stimulation interventions is the Integrated Management of Childhood Illness and Care for Development which was developed by the WHO and UNICEF (see Case Study 5).

Case Study 5: Integrated Management of Childhood Illness (IMCI) and Care for Development

IMCI is an integrated approach to child health developed by the WHO that aims to reduce death, illness and disability, and to promote improved growth and development among children under 5 years of age. In health facilities, IMCI promotes the accurate identification of childhood illnesses in outpatient settings, appropriate treatment, rapid referral and counselling of carers. In the home setting, it promotes improved nutrition and preventative care, and the correct implementation of prescribed care.

A multi-country evaluation of IMCI, conducted in Brazil, Bangladesh, Peru, Uganda and Tanzania, found that IMCI can reduce under-5 mortality and improve nutritional status, if implemented well.

Care for Development is an intervention developed by WHO/UNICEF for health workers to provide information and recommendations for cognitive stimulation and social support to parents of young children, through sensitive and responsive caregiver-child interactions. It can be delivered as part of IMCI or other child health initiatives.

A controlled trial of 0-2 year olds who received the Care for Development intervention as part of IMCI in Turkey, found positive effects on the home environment, more home-made toys were observed (42.5% vs 10.6%), and more caregivers reported reading to their children (20.0% vs 3.5%) (Ertem et al., 2006). A study of the use of Care for Development as part of IMCI for 0-2 year olds in rural China, found that children in families who received Care for Development counselling had significantly higher development scores in cognitive, social, and linguistic domains, six months after the intervention (Jin et al., 2007).

4.6 Parenting interventions including home visiting

Interventions to enhance mother-child interactions and increase developmental activities can build on those that begin during the perinatal period (see Section 4.3), and can be effectively integrated with nutrition programs or health check-ups. They can be distinct programmes or delivered as part of an integrated social protection scheme for the poorest households. Parenting interventions are especially important to support care and development of infants with special needs or at risk in other respects.

Harvard Center on the Developing Child see these interactions as “...one of the most essential experiences in shaping the architecture of the developing brain Young children naturally reach out for interaction through babbling, facial expressions, and gestures, and adults respond with the same kind of vocalising and gesturing back at them. This back-and-forth process is fundamental to the wiring of the brain, especially in the earliest years” (Center on the Developing Child, 2011, film).

Engle et al. (2011) reviewed 15 assessments of parenting interventions which promote parent-child interactions to improve responsiveness in feeding infants and young children; increase attachment; and encourage learning, book reading, play activities, positive discipline and problem-solving related to children’s development, care and feeding. Substantial positive effects were identified in relation to children’s cognitive and social-emotional development, parent knowledge, home stimulation, and learning activities with children. The most effective interventions were those with systematic training methods for the workers, a structured and evidence-based curriculum, and opportunities for parental practice with children with feedback.

Rao et al. (2013) reviewed 27 parent-focused interventions in developing countries and 26 of these showed positive effects on cognitive development. Most of these interventions were designed to promote sensitive and responsive caregiver-child interactions through psychosocial stimulation to improve cognitive and language abilities of infants and toddlers. Almost all of them focused on teaching parents to stimulate children through play, often utilising home-made toys or other readily available household items. Parent-focused interventions were often delivered through home visits, community groups, and a combination of home visits, group sessions, community activities, and primary health care and nutritional services. Interventions which involved guided interactions and practice involving both parent and child were more effective than parent-only or information-based interventions. Those conducted at least partly in group settings had a slightly greater effect than home-based interventions alone.

Interventions to support early interactions have been shown to have particular benefits for children with risk conditions such as severe malnutrition, low birthweight, iron-deficiency anaemia and HIV infection (Walker et al., 2011).

The evidence base for holistic interventions that integrate a nutrition programme with support for early interactions and learning during infancy is growing in number, quality and geographical contexts. Case Study 6 in Jamaica is one of the earliest reported inter-sectoral home-based interventions that is now yielding follow-up data over two decades, with impressive evidence of economic returns as well as child development outcomes. The study

reinforces the importance of looking beyond single sector approaches to early development. Nutrition is important, but nutrition plus early learning is a great deal better!

Interventions combining play and learning with nutrition have now been replicated in several other countries. For example, randomised trials have already been conducted in Bangladesh with malnourished children (Hamadani et al., 2006). Whereas the Jamaica study involved health workers from local clinics making weekly home visits (Powell et al., 2004), new models are now being explored that can reach more children, including mothers and children coming to the local clinic for individual play sessions every two weeks (Nahar et al., 2012). A large randomised trial in Bangladesh is working with the staff at local health clinics and asking two mothers and children at a time to visit the clinic for a joint play session every two weeks. This study run by Walker and colleagues is also exploring working with groups of mothers and children, as well as showing child development videos to mothers while they wait to see the nurse during clinic visits (Grantham-McGregor, personal communication).

A randomised controlled trial in Colombia harnessed a national social protection programme (Familias en Acción) to deliver scaleable integrated nutritional supplementation (Sprinkles) combined with psychosocial intervention to stimulate playful interactions for mothers and infants. The sample of 1,420 children aged 12-24 months was drawn from 96 municipalities across Colombia. The initial results show benefits for cognition and language, but less clear evidence for the benefits of nutrition supplementation (Attanasio et al., 2014)

Case Study 6: Long term evidence from an integrated psychosocial stimulation and nutrition intervention, Jamaica

A randomised controlled trial carried out in Jamaica in 1986-1987 measured the benefits of two years of psychosocial stimulation combined with nutrition supplementation. A total of 129 stunted children aged 9-24 months were assigned to one of four groups – control, supplementation, stimulation, or supplementation and stimulation. Supplementation comprised 1kg of milk-based formula per week. Stimulation comprised weekly 1-hour home visits by community health workers, with the objective of improving mother-child interactions through play; mothers were encouraged to talk with their children, to label things and actions in the environment and to play educational games with their children. Low cost, often home-made toys and books were provided. Emphasis was put on cognitive and language development as well as improving the self-esteem of mother and child. Both interventions significantly benefited development. Most interestingly, the development of children who received both treatments caught up with that of a group of 32 matched non-stunted children (Grantham-McGregor et al., 1991).

These children have now been followed up with, in order to track long-term outcomes. Small benefits from nutritional supplementation seen at 7 years were not detected at 11 years. When they were assessed aged 17-18 years, those who had received the stimulation intervention had higher scores on a range of cognitive and educational tests (Walker et al., 2005). Participants' psychosocial functioning was also assessed and those who had received stimulation had significantly less anxiety, depression, attention problems and higher self-esteem than the control group (Walker et al., 2006).

“Twenty years after the intervention was conducted, we find that the earnings of the stimulation group are 25% higher than those of the control group and caught up to the

earnings of a non-stunted comparison group. These findings show that a simple psychosocial stimulation intervention in early childhood for disadvantaged children can have a substantial effect on labor market outcomes and can compensate for developmental delays. The effects for female earnings are substantially higher than for males. The estimated impacts are substantially larger than the impacts reported for the U.S.-based interventions, suggesting that ECD interventions may be an especially effective strategy for improving long-term outcomes of disadvantaged children in developing countries.” (Gertler et al., 2014, p. 1001)

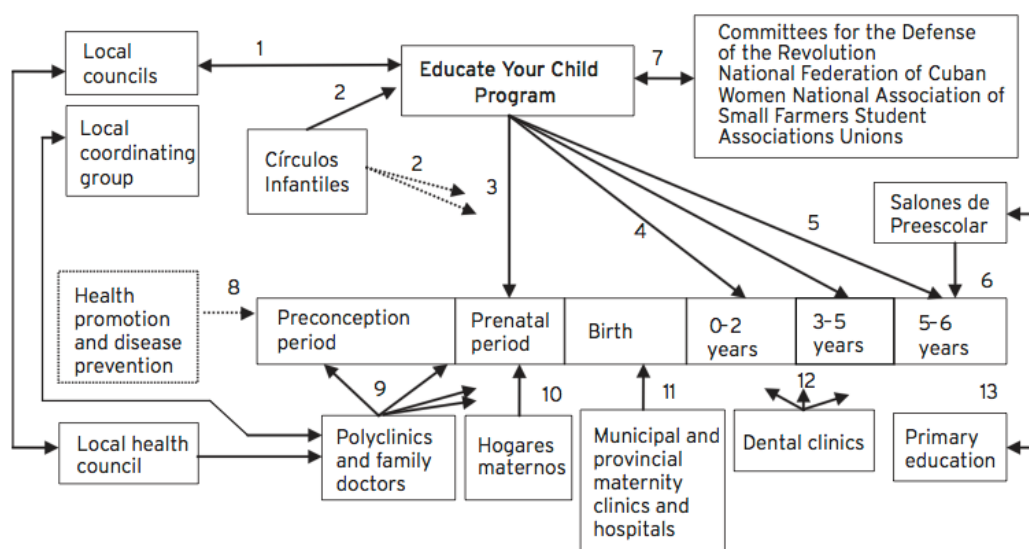
Delivery of integrated programmes for mothers and babies is a rapidly growing field for well designed research, especially focusing on nutrition and psychosocial interventions (Grantham-McGregor et al., 2014; Yousafzai and Aboud, 2014; Black and Dewey, 2014).

4.7 Community-based programmes including day care

Finally in this section we briefly review implementation of community-based models within various national programmes delivered at scale. Much of the evidence from earlier subsections is relevant to these programmes which are typically based in caregivers’ homes or small community facilities by para-professionals or experienced community mothers. Note that many of these programmes aim to be comprehensive in terms of sectors and age groups, and are equally relevant to the preschool years (Section 5). The primary goals of these programmes varies, with some prioritising child development goals for children, and others established primarily to serve the needs of working parents (usually referred to as ‘day care’).

The ‘Educa a Tu Hijo’ (Educate Your Child) programme in Cuba has been one of the most influential Ministry of Education-directed (but multi-sectoral) initiatives. It is a community-based programme that places the family at the center of programme activities, with home visiting as a feature for 0-2s, followed up by group sessions from 2 years old held once or twice a week in a community space. Importantly, at least one of the child’s parents or daily caregivers participates in the in-home and group sessions, which serves the dual purpose of involving them fully in children’s learning and providing support and training in the knowledge and skills to promote the development of their children. Seventy per cent of Cuban children under the age of 6 years participate in the programme (Tinajero, 2011). These specific activities are embedded within a much broader, integrated vision for social cohesion, illustrated by Figure 8.

Figure 8: The ‘Educa a Tu Hijo’ programme and coordination with the local network of ECD programmes



Source: Tinajero, A.R. (2010). *Scaling-up Early Child Development in Cuba – Cuba’s Educate Your Child Program: Strategies and Lessons from the Expansion Process*, p.16.

“One lesson ... offered by Educate Your Child is that it is important to integrate health and education programmes in a universal early human development programme. Integration required the training of health and education professionals in child development (health, learning, and behaviour), the formation of integrated health and education working teams, and the provision by community polyclinics and family doctors of healthcare and development services during pregnancy and the entire early child development period.” (Tinajero, 2010, p. 29)

Peru also has a long history of community-based programmes for very young children, notably ‘Wawa Wasi’ (Children’s House). It started in the 1980s and became a national programme in 1993. Evaluation of Wawa Wasi was inconclusive about positive benefits, even though the programme was highly valued by families (Cueto et al., 2009). Wawa Wasi has now been incorporated into a new social programme ‘Cuna Mas’ initiated by the Ministry of Development and Social Inclusion in 2011 (Cuna Mas, 2014). Cuna Mas aims to improve child development of children under 3 years of age in areas of poverty and extreme poverty, to promote their cognitive, social, physical and emotional development. Providing quality childcare is one of the goals of the programme currently serving more than 60,000 children aged 6 to 36 months of age who are living in areas of poverty and extreme poverty. Besides offering childcare, the programme includes components on nutrition, health care, early learning and working with families.

Other well established comprehensive programmes for mothers and babies during the first 1,000 days include, ‘Crece Contigo’ (Grow Together) in Chile (Delpiano and Vega, 2011), Hogares Comunitarios de Bienestar in Colombia and ‘Mãe Coruja’ (Mother Owl) programme in Brazil (Bernard van Leer Foundation, 2013). Finally, integrated initiatives described in other sections of the Topic Guide all encompass this age range, and have community-based

components, for example, Integrated Child Development Services (ICDS), India (Case Study 1, Section 2); and Ilifa Labantwana, South Africa (Case Study 9, Section 5).

Community-based programmes for the very youngest age group also include day care programmes for babies and infants mainly planned around the needs of working parents. These are very widespread in industrialised societies (and growing in low- and middle-income countries) especially in urban centres. They vary from informal ‘childminding’ arrangements provided by other mothers or older community women through to large scale, centre-based childcare businesses, catering for large numbers. Quality can be highly variable, depending on whether standards and regulative systems are applied. There is a long history of concern about possible adverse effects of extra-familial care for the very youngest infants, especially in low quality settings where staff ratios do not allow for continuity in individualised care and attention. Research evidence about the impacts of day care services is very weak for low- and middle-income countries (Brown et al., 2014).

4.8 Summary for age phase ‘From birth to 2 years (infancy)’

In the period from birth to 2 years:

- Birth registration helps to establish entitlement to quality services.
- Support for parents includes adequate parental leave, social protection and quality childcare in the early years.
- Good infant nutrition is vital to child survival: to prevent stunting and to promote healthy growth and development. Effective nutrition interventions include breastfeeding and nutritional supplementation.
- Infectious disorders are the leading cause of child mortality and also have an impact on growth, motor and cognitive development.
- Effective interventions include preventative measures such as vaccinations, insecticide treated bednets and the availability of WASH as well as treatment interventions.
- Sanitary living conditions contribute to a healthy environment for infant well-being.
- Parenting interventions which promote parent-child interactions and child development have positive effects on children’s cognitive and socio-emotional development.
- Successful interventions have been developed which integrate early learning and psychosocial stimulation with nutrition and health interventions.
- Community-based programmes offer an alternative model to centre-based care, especially for very young children.

Table 3: Evidence strength assessment for ‘From birth to 2 years (infancy)’

Quality of evidence:	Size of body of evidence:	Consistency of results:	Context
High	Medium/Growing rapidly	Mostly consistent	Increasingly global with some gaps

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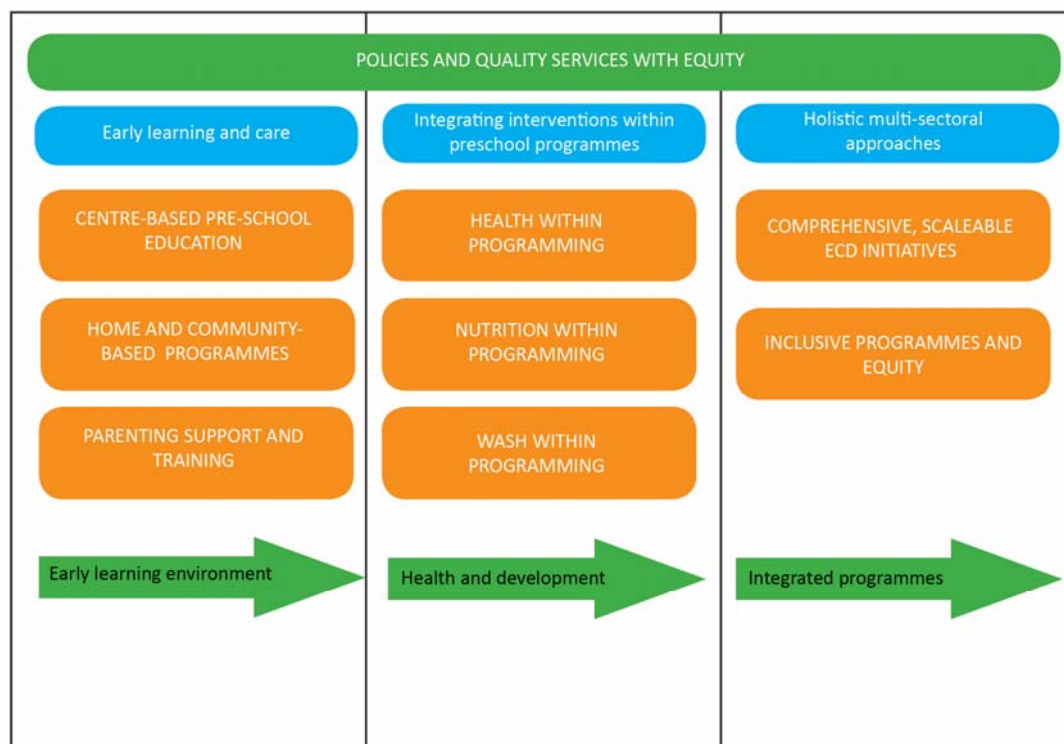
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Section 5. The preschool years – 3 to 5 years

Figure 9: 3 to 5 years old: inclusive and holistic ECD programmes



The earlier age phases reviewed in this Topic Guide have illustrated a range of entry points for ECD, including health, nutrition and WASH, as well as parenting, community-based care and social protection. Many of these programmes cover the full age range through to starting school. But in terms of policy priority and scale of programmes and research, there is a marked shift in emphasis, at around 3-4 years, with much stronger engagement from the education sector. This shift partly reflects young children's growing skills and capacities, but it is strongly shaped by the anticipation of transition into formal school (by around 5-7 years, varying between countries); and specifically with concerns about reducing inequalities in children's school readiness (see Section 6).

A holistic, integrated framework for ECD requires some re-balancing of these age-linked priorities. Section 4 (birth to 2 years) included evidence on the importance of including early learning within interventions for the youngest children and their families. In the same way, this section draws attention to the continued importance of health, nutrition and WASH interventions being coordinated or integrated with preschool services that mainly focus on providing quality early education. 'Preschool' is a conventional term used to refer to this period, but actual age boundaries are blurred, including when very young children begin attending centre-based programmes, as well as children starting formal school as young as 4.

Many of the interventions highlighted in Section 4 have continued relevance in this age phase, but are at risk of being given less attention: for example, the prevention and treatment of infectious disorders; the need for immunisation; WASH interventions to reduce diarrhoea and continued nutritional supplementation. Adequate social protection systems are also of

continued importance to support families living in extreme poverty, hazardous or difficult circumstances.

A summary of evidence on strategies for enhancing resilience to nutritional shocks acknowledges the evidence for the first 1,000 days as a critical window, but also proposes a more balanced approach to nutritional and other interventions, throughout early childhood:

“Nutrition interventions need to begin prenatally and continue during the first two years of life. Child development interventions also need to begin early, within the first two years. But they must also be continued up to and through school age. While the early years are the most effective time for establishing a foundation for later education and development, there are times that households are overwhelmed and a child falls behind. It is clear, however, that disadvantaged children benefit from additional stimulation and that programs that target psychosocial development help them to make up deficits. The earlier interventions dominate in terms of efficiency, but when these are insufficient or lacking, later interventions are needed for equity.” (Alderman and Walker, 2014, p. 3)

Rapid global expansion of childcare and preschool services provides new opportunities for more effective intervention via more integrated cross-sectoral services. The percentage of children worldwide who are enrolled in pre-primary education has increased from 33% in 1999 to 50% in 2011, although the enrolment rate for low-income countries is only 17% (UNESCO, 2014). Despite rapid expansion, half of the world’s children still don’t attend preschool, and those with greatest need are at greatest risk of missing out (including disabled, ethnic minority, poor, rural children). Ensuring equity and inclusion for all girls and boys is also urgent for some regions (UNESCO, 2014; see also Sections 5.6, 6.4 and 7.5)

Many health, nutrition and WASH interventions for 3-5 year olds continue to be delivered ‘stand-alone’ through household and community-based services, but this section also describes interventions that are integrated into daily preschool provision, for example, promotion of hand-washing as part of the daily routine; provision of clean water and toilets; and meal times as an opportunity for nutritional supplementation. Many steps towards integrated ECD are about greater coordination and referral of children between separate services. This section also includes programmes which integrate two components of early childhood development (e.g. preschool provision and nutritional supplementation) as well as initiatives aiming to provide a continuum of integrated ECD services.

Entry points in this section include:

- 1) centre-based preschool interventions
- 2) home and community-based programmes
- 3) parenting support and training
- 4) integrating nutrition, health and WASH within early childhood programmes
- 5) comprehensive, scaleable initiatives
- 6) inclusive programmes and equity.

Social protection programmes (included as entry points in Section 3 and Section 4) are equally relevant throughout early childhood.

5.1 Centre-based preschool education

The most compelling economic case for investment in ECD originally came from research with this age group, notably long-term follow-up from preschool interventions in USA, which were carried out around the time that the US Federal programme Head Start was introduced in 1964 (Zigler and Styfco, 2004). Economic analyses of the Perry Pre-school Project (Ypsilanti, Michigan) were already published by the mid-1980s (Berrueta-Clement et al., 1984) but the influence of these analyses received a strong boost 20 years later through the engagement of leading economists (Heckman, 2006; Heckman et al., 2013). For example, the widely disseminated ‘Heckman curve’, vividly conveys evidence that the highest returns on investment are during the earliest years (Figure 1 in Section 1).

Since the 1960s, the evidence base for preschool provision has grown, strengthened and broadened to include evidence from low- and middle-income countries, but with many significant evidence gaps remaining, especially for more integrated programmes, and programmes in low resource contexts. The strongest evidence is for preschool education programmes with ‘school readiness’ goals (see Section 6). Engle et al. (2011) reviewed the effects of formal centre-based preschools and non-formal community-based preschool provision. In eight of nine studies comparing preschool attendees with non-attendees, those who attended preschool had higher scores on measures of child development, including literacy, vocabulary, mathematics, quantitative reasoning and teacher assessments of performance. Two of four studies that assessed the effects of preschools on social and behavioural development reported positive effects. The effects of non-formal provision were generally weaker than those of formal preschools. Greater benefits of preschool attendance were shown for higher risk or more disadvantaged children. In some reports, preschool attendance was associated with improved school performance in Grades 2 and 3 and effects were shown into adolescence.

More recently, Rao et al. (2013) carried out a review for DFID of 32 studies of child-focused educational interventions in developing countries, most of which were conducted in preschool settings with children aged 3 or over, with specific focus on benefits to children’s cognitive development. It is not just participation in preschool programmes that matters, but the quality of the interventions provided. Rao et al. (2013) found that child-focused interventions with higher quality of stimulation resulted in significantly higher levels of cognitive development for participating children. Quality was associated with the qualifications and training of change agents (early childhood educators, teachers, childcare workers), programme structure and child-appropriate curricula and instruction. Formal preschool programmes typically have better qualified educators. Engle et al.’s (2011) review also found that enrolment in higher quality or improved preschool programmes was associated with better learning outcomes than standard, non-improved programmes. Evidence on effective programmes also includes: structured pre-reading programmes in Bangladesh (Opel et al., 2009) and Costa Rica (Rolla San Francisco et al., 2006); formal rather than informal preschools in China and Cambodia (Rao et al., 2012a; 2012b); child-centred and interactive instruction methods in Bangladesh (Moore et al., 2008) and East Africa (Mwaura et al., 2008).

It is important to note that the positive impacts of a preschool programme on children’s long term outcomes, are not only or even mainly via improved cognitive skills. The dynamic transmission processes that produce long-term effects were recognised many decades ago,

when researchers were faced with the apparent mystery that short-term cognitive benefits from US interventions ‘faded out’, but later re-emerged as significant outcomes later in life (Schweinhart et al., 2005). The longitudinal pattern of findings points to the significant role of psychosocial, attitudinal and motivational influences on children’s readiness for school, most recently reinterpreted within an economic analysis of cost effectiveness of investing in early childhood (Heckman, 2006; Heckman et al., 2013). Recognising the ways school organisation impacts the transmission of preschool effects, and the significance of differential treatment of children perceived as more or less ‘ready for school’, is important within a life course framework. The long term impacts of a preschool programme are dynamic, shaped by the school systems into which children transfer (Woodhead, 2004). These analyses reinforce the case for a holistic framework for ECD which avoids viewing development through narrow sectoral lenses and seeks to maximise the synergies between children’s economic and household security, their environment, nutrition, health, learning, and well-being. For example, early childhood programmes can benefit child and adolescent mental health, including social skills and conduct problems (Baker-Henningham, 2013; Baker-Henningham, et al., 2012).

Case Study 7 is a notable example of a successful preschool programme in a low resource context, rural Mozambique, which was evaluated through a randomised controlled trial. It includes some components of an integrated intervention (WASH, health and nutrition). The programme is now being rolled out at scale.

Case Study 7: A randomised evaluation of a preschool programme, rural Mozambique

A randomised control trial evaluated the impact of a preschool programme for 3-5 year olds run by Save the Children in 30 rural communities in Mozambique from 2008-2010.

Communities provided space, labour and some materials to build preschool classrooms. Save the Children provided materials for playgrounds, child-sized toilets and safe water for drinking and hand-washing. Classes were run by volunteer teachers, chosen by community committees who managed the preschools. Teachers received training on learning techniques and monthly mentoring. Monthly parenting meetings were held with the preschool teachers and community health activists, focusing on nutrition, health and literacy. Self-care practices such as hand-washing were strongly promoted as part of the preschools’ daily routine. The cost of running the programme was US\$2.47 per child per month.

The evaluation identified that primary school enrolment rates among children in the treatment group were 24% higher than those in the control group. Children attending primary school who had been to preschool spent an average of 7.2 hours more a week on homework, classroom time and other school related activities than the control group. The time they spent working on the family farm and attending community meetings was reduced. Children who had attended preschool showed a 12.1% increase in cognitive development compared to the control group. They also showed increases in communication skills, problem-solving, fine motor development and emotional maturity compared to the control group.

The only nutrition component of the programme was the parenting meetings which included nutrition and health topics. The baseline survey found that stunting was present in over 42% of children and the programme showed no impact on stunting or wasting. There was a

significant reduction in skin problems and a reduction in diarrhoea (although this did not reach significance) which are likely to have resulted from the WASH interventions included in the preschool programme. However, there was a 10% increase in the probability of preschool attenders having symptoms of ill health in the previous 4 weeks, largely coughs and colds, probably caused by increased daily exposure to other children. The study authors propose that in addition to preschool, children in poor, rural settings may benefit from complementary health, nutrition and early stimulation interventions starting much earlier in life.

Based on the results, Mozambique's Ministry of Education are expanding the community-based preschool model to 600 communities in the 2013-2015 period (World Bank Human Development Network, 2012; Martinez et al., 2012)

5.2 Home and community-based programmes

Home and community-based programmes offer an alternative model to the centre-based preschool, and build on programmes in Section 4.7). For example, the Hogares Comunitarios de Bienestar in Colombia serves 800,000 low-income children under age 6. This is a model of childcare provided to up to 15 children by a 'communitarian mother' in her home. It includes promotion of children's physical growth, health, social and cognitive development and the provision of supplemental nutrition (50-70% of the daily allowance). An evaluation included 10,173 children aged 3-6 years. Participation for more than 16 months was associated with a trend for positive effects on receptive language, mathematical reasoning, general knowledge and verbal ability compared to control children. Children older than 49 months who participated in the programme for more than 16 months showed a trend for higher height for age scores compared to control children (Bernal and Fernandez, 2013; Attanasio et al., 2013).

5.3 Parenting support and training

The potential of parenting interventions during the first two years of an infant's life has already been reviewed in Section 4, but support for parents is equally important during the preschool years, and can take many different forms, including encouraging positive parenting, providing advice and counseling, as well as offering practical advice and training on how best to support children's learning for all children, but especially for children with special needs (Oates, 2010).

Of 38 parenting interventions included in Rao et al.'s (2013) review, 8 targeted parents of children 3 years or above. One parenting intervention aimed at the mothers of children aged 3 to 5 years that has been found to have significant long-term positive effects is the Mother-Child Education Programme in Turkey (see Case Study 8).

Case Study 8: Mother-Child Education Programme, Turkey

The Mother-Child Education programme began as a research project in 1982. Over a two year period, mothers of children aged 3 to 5 years from low-income families received weekly training in a programme to stimulate their children's cognitive skills including language, sensory and perceptual, problem-solving, pre-literacy and pre-numeracy skills. They also participated in fortnightly group discussions designed to support mothers in their parenting and spousal roles and provide them with better coping and communication skills. Topics included nutrition, child health, child development, play activities, discipline and parent-child

communication. Seven years after the intervention, sustained effects were found in terms of school attainment, higher primary school grades and vocabulary scores, more favourable attitudes towards school and better family and social adjustment (Kagitcibasi et al., 2001). Follow up after 19 years demonstrated higher levels of university attendance and higher status employment for children who had participated in the programme (Kagitcibasi et al., 2009).

This programme has developed into a national NGO, the Mother-Child Education Foundation, which implements a range of ECD interventions (<http://acev.org/en>).

Investing in new services may not always be feasible, nor a cost-effective route to stronger integration. Quick wins can be achieved by building on existing services for mothers and children, for example, incorporating parenting education into a maternal health programme, ensuring play and learning activities are provided within community or work place childcare services, and employing new media to reach parents and children alike (for example, a local adaptation of Sesame Street has been broadcast in India since 2006).

One quick-win solution to increase learning opportunities for preschool children is by providing kindergarten or preschool classes within primary schools, using existing buildings, management structure and professionals. The potential benefits (and challenges) are discussed further in Section 6.

5.4 Integrating nutrition, health and WASH into preschool programmes

In their recent systematic review of the effects of integrated child development and nutrition interventions, Grantham-McGregor et al. (2014) note that there is an evidence gap regarding the use of centres for early learning to deliver health and nutrition interventions for children 3-6 years of age. However, there are some examples of integrated programmes.

An early study in Colombia evaluated the effectiveness of a centre-based programme for 301 children aged 3 to 7 years which provided education supporting language development, social abilities and psycho-motor skills and a nutritional intervention consisting of children being fed 75% of their daily recommended allowance of protein and calories and being given micronutrient supplements. There were four treatment periods of approximately 180 days each. Children who began the programme at a younger age and participated for longer, showed higher cognitive scores than those who began later and participated for a shorter time. Compared with the group who received just one treatment period, the children who received four treatment periods gained 0.6 standard deviation in height-for-age and 0.7 standard deviation in weight-for-age (Perez-Escamilla and Pollitt, 1995).

In their discussion of opportunities for integrating ECD and nutrition programming, DiGirolamo et al. (2014) identify that a low-cost strategy can be to enhance existing services in a target community to offer children access to child development, health and nutrition services. One example cited is an intervention being conducted in Malawi by Save the Children, the World Bank and the Government of Malawi (DiGirolamo et al., 2014), where 200 existing community-based childcare centres are being enhanced to provide additional health and nutrition interventions. Community health and nutrition volunteers have been trained to

provide health and nutrition messages and to ensure children receive nutritious meals. Impact data on health, nutrition and cognitive outcomes is not yet available.

An initiative which aims to develop WASH interventions in early childhood settings is ‘WASH from the START’ (<http://www.worldomep.org/en/wash-from-the-start/>), run by OMEP and UNICEF. This aims to extend UNICEF’s successful WASH in Schools programmes and services into early childhood settings, including homes, communities, health centres, and preschools. UNICEF is currently developing a publication of case studies about WASH activities in early childhood settings.

5.5 Comprehensive, scaleable ECD initiatives

This age phase of 3 to 5 years has been a major target group for some of the most ambitious, large scale, multi-sectoral initiatives, notably the Government of India’s Integrated Child Development Services (ICDS), which began in 1975 (see Case Study 1 in Section 2). The Oportunidades programme in Mexico also targets this age group with comprehensive initiatives built around social protection (see Case Study in Section 3). Both these – and many other examples in this Topic Guide – originate from government initiatives. But government policies and programmes aren’t the only entry point. For example, the Government of South Africa developed a National Integrated Plan for Early Childhood Development 2005-2010 which built on existing public programmes with the aim of ensuring a comprehensive range of quality services. Biersteker (2011) summarised the challenges that have been experienced of effectively coordinating multiple departments at central and provincial level, arguing that:

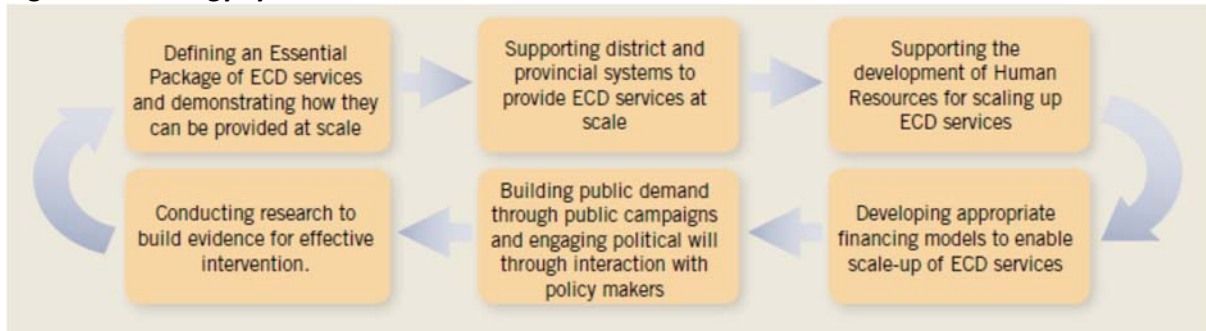
“...it is extremely difficult to coordinate and integrate the services offered by several departments. It is doubtful whether national and provincial interdepartmental coordinating structures have achieved more for young children, it has not been active in interdepartmental structures. International experience shows that it is at local level that integration is most effective, but there is little coordination in most municipalities. A further complication is lack of legislative clarity on the role of local authorities in regard to early childhood services, other than environmental health and safety.” (Biersteker, 2011, p. 41)

Against this background, a partnership of donor organisations established a new initiative, Ilifa Labantwana, with the aim of supporting the process of moving towards effective integration (see Case Study 9).

Case Study 9: Ilifa Labantwana (Children’s Heritage), South Africa

Ilifa Labantwana is a partnership of donor organisations that aims to influence South African policy implementation on integrated, scalable ECD interventions in a sustainable manner. Their strategy proposes a progressive cycle of research, advocacy, capacity building, finance modeling and support for government and providers.

Figure 10: Strategy cycle of Ilifa Labantwana



Source: Ilifa Labantwana (2013b). *Into the Future. Ilifa Labantwana Phase II 2013-2016 Strategy*. Cape Town: Ilifa Labantwana, p.5.

Ilifa Labantwana has developed strong working partnerships with government and civil society stakeholders. At national government level this includes the Departments of Social Development, Basic Education and Health, the Treasury, the National Planning Commission and the Office of the Presidency. At provincial level, partnerships have been created in the North West, KwaZulu Natal, Mpumalanga and Eastern Cape which have the dual aim of testing a population coverage approach to ECD services and supporting the development of effective government management systems.

Partnerships with civil society organisations is key to Ilifa Labantwana strategy, given that ECD services in South Africa are currently largely provided by the non-profit sector with about 70 Resource and Training Organisations (RTOs) whose coverage can be fragmented. Ilifa Labantwana is working to develop the capacity of these organisations, including supporting training of middle-level managers, developing the curriculum for an ECD practitioner qualification and completing an audit of the RTO sector in 2013.

Ilifa has conducted implementation and outcome evaluations of home visiting, community playgroup and centre-based programmes in mainly rural low resource communities. Effects on cognitive and language development of preschool children have been measured. Children who received one or other intervention were followed up on into school. The effects of home visiting interventions on caregiver stimulation of language and cognition were assessed, and the effects of training preschool teachers on the quality of care and learning environment were also assessed (More information can be accessed at: <http://www.ilifalabantwana.co.za/ilifa-publications/publication-archive/>).

Ilifa is also funding a randomised trial to test the effectiveness of a parenting programme in increasing affectional care and reducing harsh punishment among caregivers and their children who are resident in poor urban community.

In 2010, Ilifa conducted an indepth study on government funding to the ECD sector, using three municipalities as case studies – Eastern Cape, North West and Western Cape. This aimed to trace the flow of public funds for ECD and identify policy and administrative obstacles to accessing funding. This has informed Ilifa's dialogue with the national treasury in advocating for revision of the ECD funding framework, particularly to provide support to home and community-based (not just centre-based) programming. Ilifa will support a costing exercise

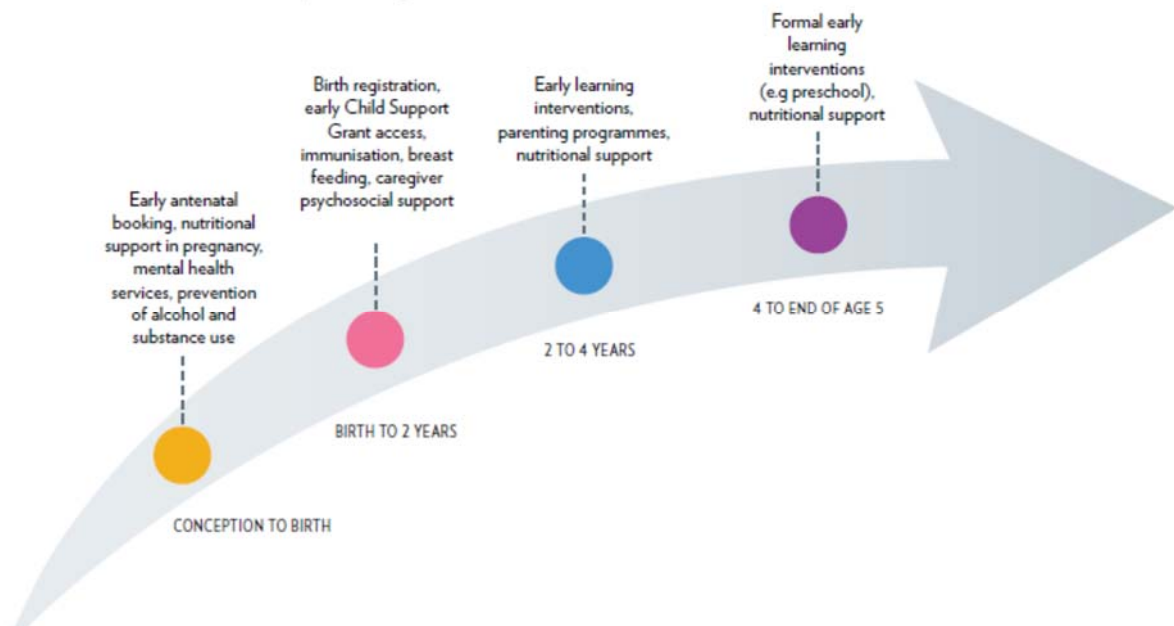
for ECD provision as part of the modelling of an Essential Package of ECD services at provincial level.

The 'Essential Package' covers the period from conception to 5 years, with ECD services seen as a continuum of interventions, in which the family at household level is the primary level of care and support. It focuses primarily on prevention and early interventions with referrals for more intensive support where necessary. The five components included in the Essential Package are:

- 1) nutritional support
- 2) primary level maternal and child health interventions
- 3) social services
- 4) support for primary caregivers
- 5) stimulation for early learning.

Service delivery indicators and measures of success have been defined for each of these components, using indicators which are already used by the relevant government department as far as possible (see Figure 11).

Figure 11: Essential Package services and support for ECD



Source: Ilifa Labantwana (2013c). *The Essential Package: Early Childhood Services and Support to Vulnerable Children in South Africa*. Cape Town: Ilifa Labantwana, p.7.

Along with its government and NGO partners, Ilifa Labantwana plans to implement the modelling and testing of the Essential Package from 2013-16 at provincial level in the Northwest, KwaZulu Natal, Mpumalanga and Eastern Cape. Ilifa will support the development and testing of the management, human resources and financing systems needed for ECD scale-up (Ilifa Labantwana, 2013b).

For examples of initiatives to scale up ECD programmes across several world regions, see Bernard van Leer Foundation (2011).

5.6 Inclusive programmes and equity

Attendance at preschool has growing significance in shaping life course trajectories for children. But there is large gap between the evidence of what can be achieved, and realities of what is actually happening, or not happening for young children and families. In the absence of state obligations to deliver services (as in a compulsory school system), huge variation is found in the extent of policies and services and the adequacy of finance and governance, with community-based, NGO-led, faith-based and private sector initiatives playing a key role in many countries. Since for the most part, services for the 3-5 age group are neither statutory nor compulsory, there is a serious risk of disadvantaged, disabled, and socially marginalised groups being excluded (Britto et al., 2013, Chapters 14-16).

Woodhead et al. (2009) analysed equity issues in accessing preschool provision for 6,000 children in Ethiopia, Peru and Andhra Pradesh, India. They identified that in Ethiopia, 50% fewer children from the poorest households attended preschool, compared to children from more advantaged homes. They report a 25% difference in access in Peru and 10% difference in Andhra Pradesh. Rural children were less likely to access preschool than urban children. Children with more highly-educated mothers were more likely to have attended preschool than those with low parental education levels. Although overall statistics do not suggest gender *per se* is a major factor affecting access, compared to the influence of poverty or location. Disaggregating gender data is informative of the specific groups at risk of being excluded. For example, the sample of 2,000 children in Peru was widely dispersed: 89% urban children compared with 73% rural. While overall gender disparities were small, rural girls show the lowest enrolment, at 69%. In a small qualitative research sub-sample, all the children without access to preschool were girls:

“Rural girls who experience delays in their school trajectories (such as late entry to first grade or repetition during primary years) are more at risk of dropping out of primary school early, or of completing primary education only... If more rural girls than any other group are entering school without pre-school experience, which may cause delays or repetitions in their school trajectories, this will have significant consequences for their ability to finish their primary education and go on to attend secondary school.” (Ames et al., 2010, p. 16)

In some countries, a growing, often unregulated, private sector has also increased inequalities, notably in India (Streuli et al., 2013; Woodhead and Streuli, 2013). These trends risk perpetuating intergenerational poverty and inequalities.

Woodhead et al. (2009) recommend several strategies to work towards addressing these equity issues including:

- Positive equitable government policies on ECD, especially targeting most disadvantaged groups.
- More effective governance, including of the private sector.
- Integration of early childhood care and education initiatives with national poverty alleviation strategies and with health and welfare policies.

In some regions, gender-norms about socialisation of girls versus boys shapes access to early childhood programmes and transition to primary school. By the time they enter preschool, most children have adopted socially-accepted gender roles and beliefs about what is

appropriate, which impact on the way they respond to school, as well as the ways they are treated by their teachers, their parents and their peers. Gender discrimination is not just about unequal access to education, but can involve more subtle decisions about which school boys versus girls attend, and more generally, the level of household investments in their education at various phases through childhood, as revealed for example, by the impact of growth in private schools on gendered decision-making in India (Streuli et al., 2011; Woodhead et al., 2013).

Monitoring for equitable, inclusive services recognises that children's gender is a major factor in some societies, while in others the challenge is marginalisation faced by ethnic minorities and other disadvantaged groups; and of course these disadvantages often coincide (see also Section 6. 4).

In emerging national systems, the needs and rights of disabled and special needs girls and boys are especially at risk of being overlooked. Scherzer et al. (2012) note that with increased infant survival rates:

"...it is estimated that more than 200 million children have developmental delay or disability. The components of this enormous problem have been studied from many angles. Studies of survivors of HIV/AIDS and malaria, for example, show that they have a high prevalence of neurodevelopmental delays, cerebral palsy, and intellectual disability. In essence, there is an emerging new population of children in low- and middle-income countries with developmental delays and disabilities whose existence must be recognised and dealt with in all health practice and planning." (Scherzer et al., 2012, p. 1)

Disabled children are seriously under-represented in early childhood programmes, their needs may not even be recognised, and overcoming stigma may be a first step towards inclusion (WHO, 2012; Section 6.4).

5.7 Summary for age phase '3 to 5 years'

- There is strong evidence for the positive impact of centre-based preschool provision on cognitive, educational and other child development outcomes from low- and middle-income contexts as well as high-income countries.
- Home and community-based programmes as an alternative to centre-based preschool can improve education and health outcomes.
- Parenting interventions can also be effective for 3 to 5 year olds.
- Integrated ECD programmes include those which integrate limited components of ECD provision (e.g. preschool provision and nutritional supplementation) and those which aim to provide holistic ECD services.
- Challenges to implementing large scale integrated ECD programmes in low resource contexts include the funding required to provide adequate infrastructure and resources; development of effective monitoring and evaluation and the challenge of effective coordination between services.
- Pro-poor policies and service delivery must be actively pursued to address equity issues in accessing preschool and ECD services and avoid the perpetuation of intergenerational poverty and inequality.

Table 4: Evidence Strength Assessment for ‘3 to 5 years’

Quality of evidence:	Size of body of evidence:	Consistency of results:	Context
Medium/High	Larger for education than for other sectors; gaps for informal and private sector	Mostly consistent	Increasingly global, but with country specific applied studies a priority in some regions

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Section 6. Transition to school: 6 years onwards

Figure 12: 6 years onwards – interventions for the transition to school



Rapid progress towards the MDG and EFA targets to achieve universal access to basic education means that enrolling in primary school is now a major transition for the majority of the world's children.

A first issue is ensuring access to quality education for all the world's children. UNESCO (2014) reports that the numbers of primary school age children not in school fell by half between 1999-2011, but still remains at 57 million. Regional differences are very significant, with 22% of children in sub-Saharan Africa still not in school in 2011. Globally, girls are over represented in the out-of-school statistics, making up 54% of those out of school, with the Arab States accounting for a significant share, along with South and West Asia.

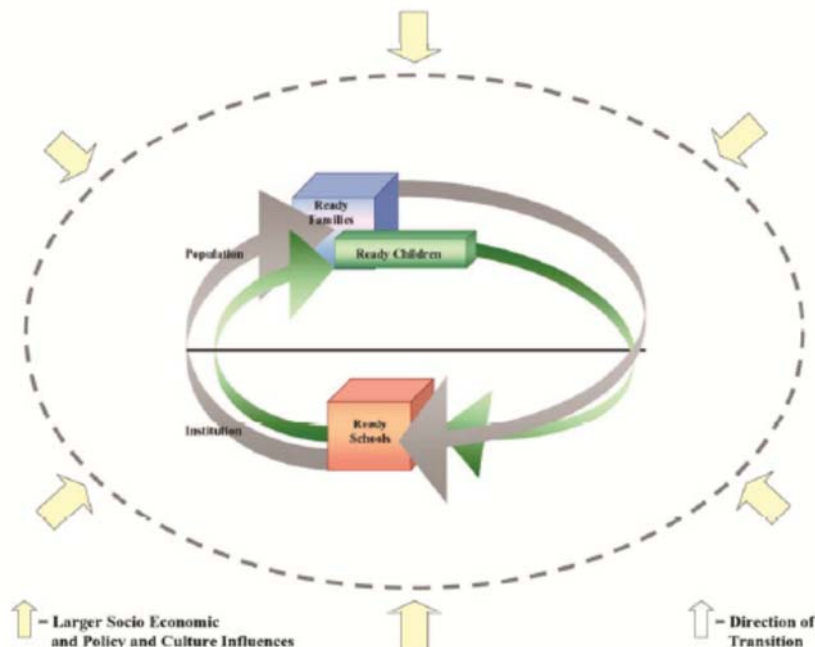
A second issue (which is a major focus for this section) is about school readiness. The concept of 'school readiness' is often assumed to be about 'children's readiness for school'. But this disproportionately emphasises children's ability to adjust to the demands of school: the curriculum, pedagogy and expectations of prior learning; the physical, social, language and cultural environment of school; the expectations for their behavior and teachers' use of physical punishment; etc. The flip side of the coin is about 'schools' readiness for children'. Or as Kagan puts it, readiness is *"the match between the child and the institutions that serve the child"* (Woodhead and Moss, 2007, p. 22). Evaluating schools' readiness is important as a starting point for policies and reforms designed to ease children's (and parents') transition, ensure access and quality, promote inclusion and respect for diversity and children's individuality, strengthen their progress, develop skills and academic achievement and reduce dropout.

As with previous sections, this age phase is approximate: age of entry to school varies between countries according to organisation of preschool services, legal requirements and actual admission practices. Readiness issues don't just apply to the transition to school, but the whole age span of ECD as in earlier sections.

Britto (2012), proposes three dimensions of school readiness (the interaction between them is illustrated in Figure 13):

- Ready children: focusing on children's learning and development.
- Ready schools: focusing on the school environment along with practices that foster and support a smooth transition for children into primary school and advance and promote the learning of all children.
- Ready families: focusing on parental and caregiver attitudes and involvement in their children's early learning and development and transition to school.

Figure 13: Building competency/capacity for transition to school



Source: Britto (2012). *School Readiness: a Conceptual Framework*, p. 7.

All of the factors discussed in relation to ECD in previous sections have an impact upon the readiness of individual children and families for school, for example, poverty, children's health, nutrition, living in a healthy environment, parental stimulation and support and experiences of childcare or preschool. The impact of these factors on their readiness will vary according to their gender, ethnicity, disability, and a host of other factors, including individual differences.

This section will also focus on schools' readiness for children, recognising that primary school attendance is now a near-universal experience in most countries of the world, with potential to build on healthy development and learning during earliest childhood, strengthen skills, capacities and long-term outcomes and further reduce inequalities established early in life. Well established school systems provide opportunities that extend beyond children's educational development to include WASH, nutrition and health interventions, within the

school environment as well as in the wider community. These may be delivered as stand-alone interventions or as integrated initiatives.

Entry points for intervention in this age phase include:

- 1) children's readiness for school
- 2) families' readiness for school
- 3) schools' readiness for children
- 4) inclusive practices in the transition to school
- 5) WASH in schools
- 6) school-based health interventions
- 7) school-based nutrition interventions.

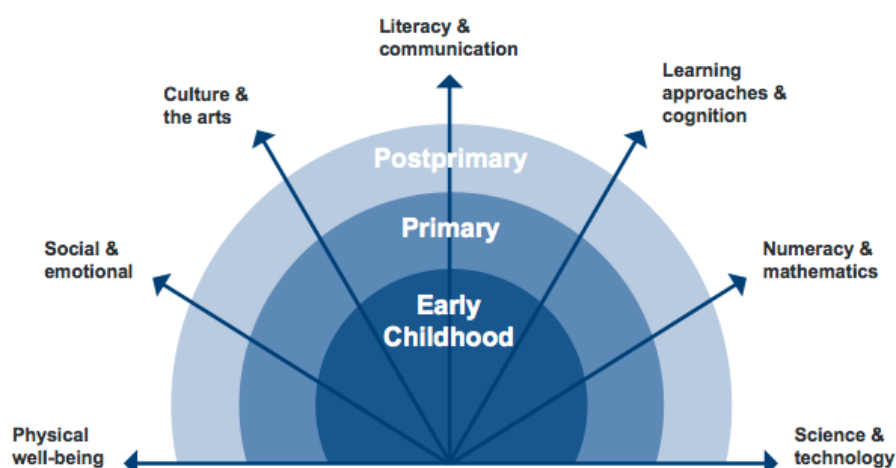
6.1 Children's readiness for school

All of the factors that have influenced children's development during their early childhood have an impact on their preparedness for school and their ability to participate in learning. Lack of antenatal care, poor nutrition, low birthweight and lack of routine immunisations have all been linked with poorer school outcomes and performance (Britto and Limlingan, 2012). A holistic definition of children's school readiness given by Kagan et al. (1995) includes five domains: physical well-being and motor development; social and emotional development; approaches to learning; language development; and cognition and general knowledge, including mathematics.

One major gap in planning and monitoring school readiness issues, as well as evaluating programme effectiveness, has been the shortage of appropriate measures for monitoring and assessment of children's capacities at this stage. One global initiative has identified a global framework of learning domains:

"Entry to primary school is a key milestone in a child's learning trajectory, and measuring competencies across multiple domains at this point or in the years before entry to primary school can help drive improvements in early childhood education, health, family services, and other sectors serving young children. Given the complexity of child development, a holistic measure across several domains is the best way to capture learning at this stage. This typically includes aspects of learning related to five of the seven domains: physical well-being, social and emotional, literacy and communication, learning approaches and cognition, and numeracy and mathematics." (UNESCO-UIS/Brookings Institution, 2013)

Figure 14: Global framework of learning domains



Source: UNESCO-UIS/Brookings Institution (2013). *Towards Universal Learning: Recommendations from the Global Metrics Task Force*, p. 11.

Save the Children has also been working towards similar goals with its new International Assessment of Development and Early Learning. In the first phase of the process, which included Bangladesh, Bhutan and India, more than 60 items have been tested covering five developmental domains with a goal to narrow these down to the most reliable and feasible items that can be used across countries and contexts with 3.5-6 year old children. Continuous modifications and improvements have been made through trials in Ethiopia, Pakistan, Rwanda, Zambia and Mozambique in 2012. By early 2013, a consolidated 20-item version of the original tool had solidified and further testing began in Bangladesh, Egypt, Indonesia, Malawi and Mali (Save the Children, 2014).

In the absence of systematic developmental assessments, successful adjustment into the early school grades is a widely used readiness indicator. For example, Mingat (2005) estimated the impact of preschool on the numbers of children persevering to Grade 5 of primary education. Data was available from 40 countries, 24 of them in sub-Saharan Africa. A positive association was found between preschool enrolment and low school dropout, and a negative association between preschool enrolment and repeating grades.

However, early childhood experts express concern about trends to 'schoolify early education and care', especially a risk when preschool classes are integrated into primary schools, and taught by primary trained teachers, and narrowly focused on early literacy and numeracy (Bennett, 2006). In many countries, creating a 'Grade 0' in primary schools has become a practical, relatively low-cost solution to extending preschool opportunities, which can rapidly increase access (Biersteker, 2008). In other countries, enrolling children as young as 4 into formal kindergarten classes in private-for-profit English medium schools is a popular response to poor parents' high aspirations for children to get a headstart in a competitive school system, as for example in India (Streuli et al., 2011; Singh and Bangay, 2014).

Leaving aside these general issues surrounding the relationship between the early childhood programmes and school readiness, Britto (2012) identifies where specific school readiness interventions can help children enter school 'ready to learn', and so more likely to stay in school and achieve learning and academic success:

- Reduced drop-out rates: Initial test results from school readiness interventions in several developing countries demonstrate reduction in primary school drop-out rates. For example, the Government of Cambodia piloted a school readiness programme in the first two months of Grade 1 of primary school that demonstrated positive results for student learning and a reduction in drop-out rates (Nonoyama-Tarumi and Bredenberg, 2009).
- Reduced grade repetition: For example, in Nepal, participation in school readiness programmes was linked with a substantially lower repetition rate in Grade 1 for children compared to the national average (Save the Children, 2003).
- Secondary/high school completion: Data from several developing countries, including Brazil, Jamaica and the Philippines, indicate a strong association between early skills and later high school completion, controlling for a host of influencing factors such as family income and education (Grantham-McGregor et al., 2007).
- Academic achievement: Data from several studies in developing countries, including Guatemala and South Africa, have demonstrated a positive association between school entry ability and academic performance in primary school and later academic achievement (Liddle and Rae, 2001; Stith et al., 2003).

6.2 Families' readiness for school

Families prepare their children for school right from birth, and even before birth, in multiple ways. As discussed in earlier sections, all of the following interventions have an impact on the child's development: the health and nutrition of the expectant mother; breastfeeding in infancy; living in a healthy environment and early stimulation. Yet the extent and nature of impact may vary according to the cultural significance attached to their gender, and other factors. Poverty is strongly related to parenting practices and children's development. Some evaluations suggest that children from disadvantaged backgrounds could already be years behind their economically-advantaged peers at school entry (Brooks-Gunn et al., 1999).

Supportive parenting and stimulating home environments have been shown to be among the strongest predictors of school performance during primary school and beyond. Britto (2012) identifies the following aspects as important for school readiness:

- parents' beliefs, attitudes and goals regarding their children's education
- the learning environment provided in the home
- supportive and responsive relationships within the family which are the building blocks of children's social and emotional development
- parents' commitment to on-time school enrolment.

The Mother-Child Education Programme in Turkey (Case Study 8, Section 5) illustrates interventions with the specific aim of helping mothers prepare children for early literacy and numeracy skills. Family focused initiatives don't just target mothers, fathers or other adults. The Child-to-Child Trust has pioneered work involving older siblings and peers in supporting young children's development. For example, 'Getting Ready for School' resources originally designed for parent programmes (Hayes et al., 2006), have been adapted for use by children (Kanji and Landers, 2009). In Ethiopia, child-to-child has been incorporated within the framework policy for early childhood education in 2010, as a cost-effective way to increase access to early education. This is done by setting aside primary school classrooms, with older

children supporting preschool children's learning, in ways that may be considered mutually beneficial (Orkin et al., 2012).

6.3 Schools' readiness for children

The challenges of ensuring high quality developmentally-appropriate primary school are widely recognised. MDG and EFA priorities to increase access have now shifted to re-prioritisation around 'achieving quality for all' (UNESCO, 2014). The impact of low quality schooling on pupil experience, low achievement and early drop-out are relevant to this Topic Guide because of the impact on young children's successful transition to school. The quality of the school environment is linked with higher rates of student retention and lower drop-out rates, especially for girls (Lloyd et al., 2000). For example, Young Lives research in a large sample of schools in Ethiopia reported that only around 50% of schools had access to water on site. Fewer than 50% of schools provided toilets for girls with an acceptable degree of privacy. Delayed enrolment and early dropout was commonplace, for boys as well as girls, but the reasons for dropping out varied by gender, with boys more likely to be expected to take on agricultural labour. The most common reason for girls to leave school was that they were needed to look after their siblings. The second most common reason for girls dropping out of school was that the direct costs of schooling were considered to be too high (Frost and Rolleston, 2013).

Although schools cannot influence most of the factors that have affected children's development before they enter the school system, there are many ways in which they can increase their readiness to enable children to access school and to develop to their full potential through the opportunities that school provides. School readiness factors are not just about basic quality issues (the physical environment, resources, teacher qualifications, etc.). They also include location, accessibility and admission practices that shape which children are included and which are excluded (Woodhead and Moss, 2007).

Preschool and primary school settings are often very different in relation to rules, routines, structure, curriculum, teachers' expectations and styles of interacting. Instruction in primary school is often more structured. Early childhood curricula often focus on domains of learning (cognitive, physical, social, etc.) whereas primary school curricula are often subject-based (reading, mathematics, science, etc.). If children have attended preschool, they may find it difficult to adjust to these changes. Some countries have developed strategies to provide greater continuity to ease children's transition between these settings (Britto and Limlingan, 2012). For example, projects in Jamaica and Guyana have developed an integrated curriculum for pre-primary and primary school, organised around the child's developmental cycles (UNESCO, 2007). The Step by Step Transition to Primary School Programme, run in a number of Central Eastern European and Commonwealth of Independent States (CIS) countries, uses strategies including students from Grade 1 talking with preschool students about their experiences; preschool children participating in role play; preschool teachers and parents reviewing the primary school curriculum and discussing the skills children will need and primary and preschool teachers training using the same pedagogic framework and core modules (Arnold, 2006).

The concept of schools' readiness for children can include not only how they support children's transition to school and their educational development but, more widely, how they support children's holistic development. This is illustrated in Case Study 10.

Case Study 10: UNICEF Child-Friendly Schools

The concept of 'ready schools' shares characteristics with UNICEF's Child-Friendly Schools initiative which focuses on improving the quality of the school environment to support children's holistic development and comprehensive learning. It aims to be child-centred in teaching and learning, health, hygiene, safety (regulating school construction and playgrounds), protection (banning punishment, abuse or violence), gender sensitivity and inclusion, aiming to reach marginalised children and involve families and communities (Britto, 2012). Child-Friendly Schools take an inter-sectoral approach which is, *"concerned as much with the health, safety, security, nutritional status and psychological well-being of the child as... with teacher training and the appropriateness of the teaching methods and learning resources used for schooling"* (UNICEF, 2009, p. 3).

Inter-sectoral interventions carried out as part of Child-Friendly Schools include:

- working to improve water supply; gender-sensitive sanitation facilities and hygiene promotion
- provision of school health interventions including de-worming, malaria prevention and vaccination programmes
- provision of school nutrition interventions including school feeding and micronutrient supplementation.

For example, Malawi's Child-Friendly Schools model stresses the importance of inter-sectoral partnerships. UNICEF, the World Food Programme, the Government, non-governmental organisations and other civil society organisations collaborate to provide quality primary education. This includes teacher training on child-friendly methods, school feeding for children attending primary day schools, and take-home rations for girls and orphans. Schools are provided with furniture, teaching materials and water and sanitation facilities, along with life skills training, deworming services and micronutrient supplementation (UNICEF, 2009).

A study in the Siraha region of Nepal provides clear evidence of the role that child friendly preschool can play in improving school participation amongst marginalised groups, and especially girls. At the time of the study, only 30% of children from *dalit* communities (a low caste traditionally defined as 'untouchable') were in school, compared to 80% for the country as a whole. And the percentage of *dalit* girls attending was half that of their brothers. A Save the Children programme included making the schools more child-friendly and provided community-based ECD to *dalit* children. The findings indicated that 95% of participants in the ECD programme continued on to primary school, compared to 75% of children who had not attended ECD centers. Moreover, the increased participation rates was much more striking for girls (Bartlett et al., 2004).

6.4 Inclusive practices in the transition to school

As part of a school's readiness to receive all girls and boys, inclusive practices address the inequities that persist in enrolment, attendance and learning outcomes based on gender, poverty, geographical location, ethnicity, health status, and disabilities (Britto, 2012).

Educational exclusion and inequity often begins at preschool stage (see Section 5.5) placing already disadvantaged children even further behind their peers. This is then all too often amplified at school (Woodhead et al., 2013), contradicts the stated goals of school systems, and is not inevitable, as studies of school effectiveness confirm (Rolleston et al., 2013). Some major inclusion issues relate to the following three areas:

Mother tongue education

Many schools teach in the 'official language' rather than children's first language. This is an issue that particularly affects children from ethnic minorities. When the language used in school is not a child's first language, particularly in environments characterised by poverty and with high rates of illiteracy, the chances of dropout increase substantially (Villegas and Lucas, 2002). Children who learn in their first language for the first six to eight years perform better in terms of test scores and self-esteem than those who are taught in the official language (Thomas and Collier, 2002). Once a child can read and write in his or her first language, the skills are transferable to other languages. Evidence from Bolivia, Guinea-Bissau, Mozambique and Niger shows that parents are more likely to communicate with teachers and participate in their children's learning when local languages are used (Benson, 2002). Researchers who conducted classroom observations across 12 countries in Africa, found that the use of unfamiliar languages led primary teachers to use teacher-centred methods which undermined students' learning (Alidou et al., 2005).

Gender sensitive practices

Just 20% of low-income countries have achieved gender parity (equal enrolment of girls and boys) at primary level. Equal enrolment is only the first step towards gender equality on education. Other starting points for schools include making sure the school environment is safe; improving facilities to provide, for example, separate toilets for girls and boys; training teachers in gender sensitivity; achieving gender balance among teachers and rewriting curricula and textbooks to remove gender stereotypes (UNESCO, 2014).

Teaching in children's first language is also important to promote gender equality. In some societies, girls are less likely than boys to be exposed to the official language, because they spend more time at home. Girls who are taught in their first language tend to stay in school longer, have less grade repetition and achieve more academic success than those who are not (UNESCO, 2005).

Inclusion of children with disabilities and special educational needs

A literature review on inclusive education for children with disabilities and special educational needs identified the following qualities of successful inclusive schools in developing countries (Peters, 2003):

- early intervention when children are in the formative stage of development
- small classes
- well trained and valued teachers
- multi-ability groups
- positive learning environments with a sense of community
- strong parental involvement.

An evaluation of a Save the Children project which provided inclusive training for teachers and parents of young children in Mongolia, found an increase in the percentage of children with disabilities enrolling in preschool and primary school from 22% to 44% (Save the Children, 2008). An inclusive education project which ran from 1993-2009 in Lao, focused on changing the educational pedagogy from being teacher-centred to child-centred. Teachers received training in inclusive education; actively supported children with disabilities in class; enabled other children to provide peer support; used resources to support learning and collaborated with parents to encourage them to support learning at home. The number of children with disabilities in the schools increased. The percentage of children with special needs passing grades increased in 2004-2007 to 78% and the percentage of all students passing grades also increased to 86% (Grimes, 2009).

As well as enabling children to access opportunities for their educational development, schools are well placed to provide opportunities for children's healthy development through WASH, health and nutrition interventions (WHO, 2012).

6.5 WASH programmes in schools

WASH and health

Many of the WASH risks for school age children and the interventions targeted at them are related to health outcomes.

The impact of diarrhoea on school entry and intellectual performance has been discussed in earlier sections. A campaign promoting hand-washing with soap in 30 primary schools in Egypt reduced diarrhoea-related absenteeism by 30% (Talaat et al., 2011). Similar results have been found in China (Bowen et al., 2007) and Colombia (Lopez-Quintero et al., 2009). Each of these studies also demonstrated a significant reduction in absenteeism related to respiratory-illness as a result of improved hand hygiene (Mooijman, 2012).

Intestinal worm infections include hookworm, whipworm, roundworm and schistosomiasis. Worm infections are spread through unhygienic environments in soil or water and unhygienic behaviour via food or hands. School age children have the highest infection prevalence of any group; an estimated 47% of children ages 5-9 in the developing world suffer from a worm infection (Mooijman, 2012). These are associated with impaired learning, increased absences from school, and decreased future economic productivity (Bethony et al., 2006; Clasen et al., 2010). Children enduring intense infections with whipworm miss twice as many school days as their infection-free peers (WHO, 2005). Children with heavy-intensity hookworm infections have shown to suffer from growth retardation, as well as intellectual and cognitive impairments. A worm reduction programme in Kenya reduced absenteeism by a quarter (Miguel and Kremer, 2004).

WASH and school attendance

Many of the studies cited here report the negative impact of WASH-related illnesses on children's attendance at school. There are other aspects of WASH which have an impact on school attendance, particularly that of girls. In many countries, girls bear more responsibility for water collection for the family than boys. A study in Ghana showed a significant relationship between water collection time and girls' school attendance. A 15-minute reduction in collection time increased the proportion of girls attending school by 8 to 12%.

The impact of hauling time on school attendance was stronger above a 30-minute round trip (Nauges and Strand, 2011). A World Bank study in four countries showed that girls' school attendance increased significantly for every hour reduction in water collection. In Nepal, attendance improved by over 30% (Koolwal and van de Walle, 2010).

The lack of toilets or separate toilets in schools for girls is a major reason for girls not attending school (LaFraniere, 2005; MacIsaac, 2006).

WASH interventions

WASH interventions in schools include the provision of safe water, toilets, hygiene promotion and education, cleaning and food hygiene practices.

Hygiene education can be provided through participatory education by teachers in school or by children's involvement in youth hygiene clubs. It aims to develop children's knowledge and understanding, attitudes and practical skills in relation to hygiene. Mooijman (2012) identifies the following key areas for children's life skills to be developed in relation to WASH: safe use of toilets; personal hygiene; hand-washing with soap; waste management and water drainage; water treatment, handling and storage and food hygiene. School-based studies have demonstrated potential for influencing hand-washing behaviour through membership in safe water clubs, peer-to-peer teaching, classroom sessions with focused training materials and role-playing or songs (O'Reilly et al., 2008; Bowen et al., 2007; Onyango-Ouma et al., 2005).

Mooijman (2012) includes implementation guidelines for WASH in schools, including location and design of facilities, WASH standards and indicators, hygiene education, community linkage, teacher training and monitoring and evaluation. WASH standards include the following areas: water quality, quantity, facilities and access, hygiene promotion, toilet provision, control of vector-borne disease, cleaning and waste disposal, food storage and preparation.

6.6 Health programmes in schools

Malaria, waterborne diseases, parasitic infestations, diarrhoea, cholera, dehydration and HIV and AIDS are just some of the health risks to school age children. WASH-related illnesses, including diarrhoea and worm infections, and interventions targeting them, have already been discussed. Other health issues also have an impact on school readiness, in terms of children's cognitive ability, attendance, academic performance and school completion.

In a survey of 3,000 children at 20 schools in Ethiopia, the second most common reason for dropping out of school (after the need for the child to undertake domestic/agricultural work) was for health reasons: illness or disablement. Qualitative findings indicate that some children dropped out repeatedly, or experienced long periods of absence due to a variety of health problems. Illness of a family member also caused children to drop out if it caused a shortage of family labour, including labour for domestic tasks (Frost and Rolleston, 2013).

A history of malaria attacks was associated with poorer cognitive function at school entry in Sri Lanka (Fernando et al., 2003). Longitudinal studies with school aged children from Brazil and Mali have shown associations between attacks of clinical malaria or asymptomatic parasitaemia and poorer cognitive scores and academic performance. In a cross-country

analysis controlling for education quality and other confounders, grade repetition and primary school completion rates were related to malaria exposure (Thuilliez, 2009). Randomised clinical trials of chemoprophylaxis in school children showed significant benefits to language, mathematics and attendance in Sri Lanka (Fernando et al., 2006), and to attention in Kenya (Clarke et al., 2008). Skills-based health education can give children the ability to recognise the signs and symptoms of malaria and to recognise the need to seek treatment. Skills-based health education through schools can also help promote a community-wide understanding of malaria with particular emphasis on the need for community-based control measures such as the use of impregnated bed nets (World Food Programme/UNICEF, 2005).

Schools can work to combat health risks by providing a healthy school environment that provides access to safe WASH facilities; by implementing life skills-based health, hygiene and environmental education; and by providing health services as an integral part of schooling. Schools can be used as appropriate venues for health interventions, including vaccination programmes, malaria prevention and systematic deworming (UNICEF, 2009). The World Food Programme/UNICEF Essential Package and the Focusing Resources on Effective School Health (FRESH) framework are examples of large-scale, comprehensive school health initiatives that incorporate WASH and nutrition interventions (see Case Study 11).

Case Study 11: Focusing Resources on Effective School Health (FRESH)

FRESH is a shared framework agreed upon by WHO, UNESCO, UNICEF and the World Bank in 2000 to strengthen school health, hygiene and nutrition programmes. The four core components of the FRESH framework are:

- health policies in school that advocate and facilitate the teachers' role in promoting good health practices and helping to make schools healthy learning environments
- adequate sanitation and access to safe water to reduce disease, worm transmission and waterborne illnesses in the school environment
- skills-based health education that promotes good hygiene, avoidance of disease, prevention of worm infection and other illnesses
- access to health and nutrition services that include school meals and deworming (UNICEF, 2009).

The Essential Package consists of 12 interventions to improve the health and nutrition of school age children, implemented by the World Food Programme and UNICEF in the context of the FRESH framework (World Food Programme/UNICEF 2005). The 12 interventions are:

- 1) basic education
- 2) food for education, including take-home rations targeted to girls, orphans and other vulnerable children who attend school regularly; in-school meals or snacks
- 3) promotion of girls' education
- 4) potable water and sanitary latrines
- 5) health, nutrition and hygiene education
- 6) systematic deworming
- 7) micronutrient supplementation
- 8) HIV and AIDS education
- 9) psychosocial support
- 10) malaria prevention
- 11) school gardens

12) improved stoves.

6.7 Nutrition programmes in schools

School-based nutrition interventions include school meals and snacks; take-home rations which are often targeted to girls and other vulnerable children, and micronutrient supplementation. These can have an impact on a range of physical, cognitive and educational outcomes.

Evidence from a meta-analysis shows that school feeding programmes have small effects on school age children's anthropometry, particularly in low-income settings (Ruel and Alderman, 2013). A systematic review found that the highest quality studies (randomised controlled trials from low-income countries indicated that children who were fed at school gained an average of 0.39kg more than children from control groups over 19 months; in lower quality studies (controlled before and after trials), the difference in gain was 0.71kg over 11.3 months. For height, results from low-income countries were mixed; in randomised control trials, differences in gains were important only for younger children, but results from the CBAs were large and significant overall (Kristjansson et al., 2007).

School meal programmes can also improve micronutrient status either through increasing diet diversity or through fortified foods. A review of randomised evaluations of iron-rich school meals (fortified or providing animal-source foods) documents that three of four studies improved iron status (Ruel and Alderman, 2013). A study of the effects of providing biscuits fortified with iron and iodine found that rates of absenteeism were reduced as well as improvements in some dimensions of cognitive function compared to a control group provided with a similar snack without fortification (van Stuijvenberg et al., 1999).

According to Alderman and Bundy (2011), a limitation of school feeding programmes, and related research, is that their focus is not on the most vulnerable period for malnutrition, from pregnancy to 2 years. However, school feeding can also benefit other members of the household when the food provided is shared or when the school age child's intake at home is reduced. A few studies have included younger siblings of students in their impact evaluations. For example, in Burkina Faso, weight-for-age increased by 0.38 standard deviations for children aged 12-60 months whose sisters were eligible for a take home ration compared to a control group (Kazianga et al., 2009). In Uganda, younger siblings of beneficiaries of a school feeding programme had a significant improvement in height-for-age of 0.36 standard deviations.

In relation to educational and cognitive outcomes, Kristjansson et al.'s (2007) systematic review identifies that children who were fed at school attended school more frequently than those in control groups; this translated to an average increase of four to six days a year per child. Children who were fed at school gained more than those from control groups on mathematics achievement, and on some short-term cognitive tasks. Numerous studies show that in-school feeding has a positive impact on school enrolment or participation in areas where initial indicators of school participation are low (Jukes et al., 2007; Adelman et al., 2008). Alderman and Bundy (2011) also report evidence that school feeding programmes can

have a positive impact on cognitive ability and academic achievement (see also Singh et al., 2014).

6.8 Summary of age phase ‘6 years onwards’

- Multiple factors related to ECD have an impact on children’s readiness for school. These include poverty, health, nutrition, environment, parental stimulation and experiences of preschool, which in turn may vary according to children’s gender, ethnicity, disability, etc.
- Schools can improve their readiness for children through strategies to ease the transition to school and through inclusive practices as well as provision of a quality learning environment.
- School readiness can have a positive impact on drop-out rates, grade repetition, school completion and academic achievement. Schools can provide opportunities beyond children’s educational development to address their holistic development, including through WASH, health and nutrition interventions.
- WASH interventions in schools can reduce the incidence of WASH-related illnesses, including diarrhoea and worm infections, and associated absenteeism.
- Schools can work to combat health risks by providing a healthy school environment, implementing health education and providing health interventions including malaria prevention, deworming and vaccination programmes.
- School feeding programmes can have an impact on children’s physical, cognitive and educational outcomes.

Table 5: Evidence strength assessment for ‘6 years onwards’

Quality of evidence:	Size of body of evidence:	Consistency of results:	Context
Moderate	Medium, especially education sector focussed	Mostly consistent	Strongly shaped by national education system quality and priorities

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Section 7: Conclusion. Towards more integrated ECD

Previous sections have drawn attention to more age-specific entry points for strengthening ECD. This final section revisits the overarching question introduced in Section 2, about moving from a multi-sectoral to an inter-sectoral system, of more integrated – or at the very least better coordinated – ECD services.

7.1 Holistic early childhood development

Integrated ECD recognises that young children’s lives (and their parents’ lives) are lived holistically, not sectorally. Ensuring quality services are ‘joined-up’ at the point of delivery is a first indicator of progress.

Fostering an enabling environment that comprehensively addresses the development of every girl and boy through childhood cannot be adequately addressed through interventions via any single sector (World Bank, 2013). The starting point for any integrated ECD reform is an appreciation of the interdependencies and interactions between different aspects of ECD that have traditionally been siloed in terms of nutrition, health and education (Naudeau et al., 2011). Household poverty and health affect education and personal well-being – and vice versa. For example, physical growth or ‘stunting’, as an indicator of undernutrition, is linked to later height gain, to children’s learning and to their self-esteem. Achieving objectives within a sector, requires acting beyond it (Dornan and Woodhead, 2014).

Ecological models of development (outlined in Section 1) are useful for identifying the complexities of early human development systems, and as a starting point for articulating risks and potential entry points for intervention: via specific ‘micro-system’ settings (household, health clinic, preschool, school, etc.); as well as more indirect influences to improve child development via macro-system focused public policy (employment laws, social protection programmes, etc.) (Bronfenbrenner, 1979). Whereas coordination efforts are mainly focused on specific service delivery sectors, integrated child development objectives are achieved through attention to wider systems, for example, economic policies, social protection provisions, housing and environmental policies, employment law and parental leave entitlements.

7.2 Multiple entry points and delivery platforms

Full-scale systemic integration may not always be feasible, nor cost effective. Building on sector-specific delivery platforms may be a cost-effective and pragmatic way forward.

Concern about fragmentation of service delivery, ‘sectoral silos’, and weak coordination is the most common starting point in making the case for integration. While sectoral programming and expertise can ensure delivery on key child development targets, tight boundaries between sectors are unsatisfactory to the consumer (children and parents), they do not capitalise on the synergies between goals for development and they can be inefficient in their use of resources. Case studies in earlier sections illustrate the full range of sectoral and professional starting points, as well as delivery platforms linked to health clinics, midwifery and nutrition services, home visiting, centre-based preschools and primary schools. While the Topic Guide has included examples of ‘root and branch’ integrated systems at ministerial and service-delivery levels, steps towards integration can be more modest. Training health workers to deliver early learning as part of home visits, or providing good nutrition and health checks

within a preschool or school programme are relatively simple and well proven steps, which may be more cost effective than attempting full integration at every level.

7.3 Horizontal integration

Horizontal integration coordinates social protection, health, nutrition, WASH, education, child protection, etc. An added challenge is to ensure integration within a sector.

Advocates for greater integration within ECD generally assume the main priority is to strengthen coordination between social protection, health, nutrition, WASH, education, etc. The added challenge of ensuring integration even within sectors is often overlooked. For example, integration within health care systems is a major focus for research, organisational and professional development. Goodwin and Ferrer (2013) identify five distinct types of horizontal integration within care systems, which are here adapted to ECD services:

- 1) functional (e.g. resources, planning, accounting and monitoring systems)
- 2) organisational (e.g. between different institutions or programmes)
- 3) professional (e.g. amongst various specialists at different grades, as well as with para-professionals)
- 4) programme/practice (e.g. between different components of an ECD service, each with distinct goals, methodologies and procedures)
- 5) focus (e.g. image of the child's needs and rights, and inclusion of parents and others as clients).

7.4 Vertical integration

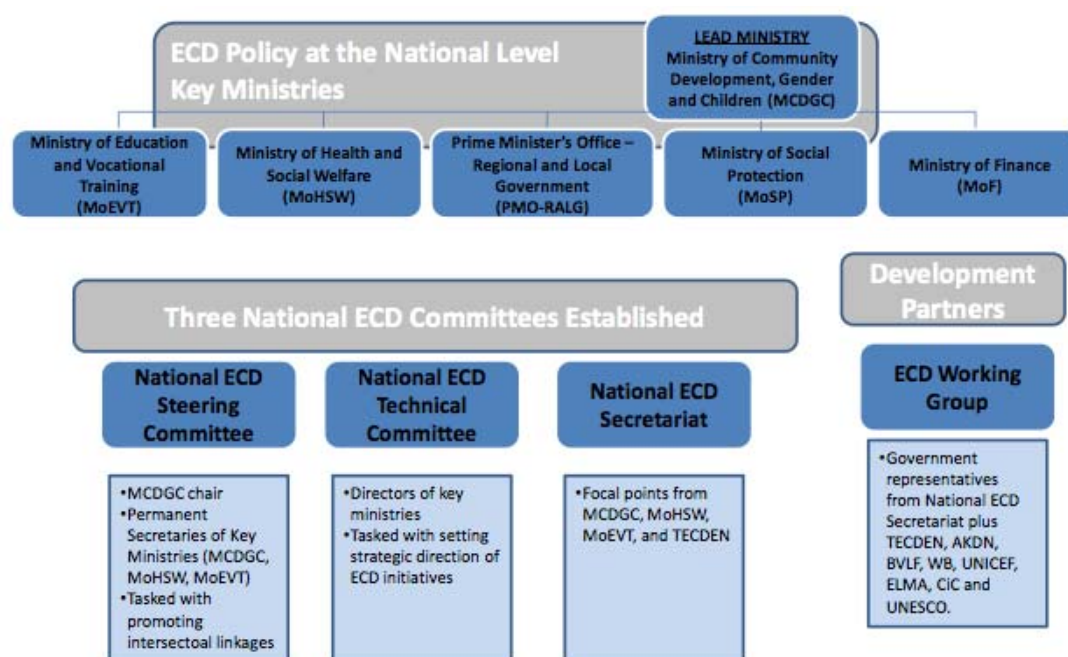
Effective vertical integration links central government policies with local services, with clear lines of responsibility and effective two-way communications.

While integration initiatives can be triggered at any level, from local community programme to President's office, large-scale systemic change generally requires central government engagement and coordinated delivery systems. A national ECD policy is crucial in making goals, objectives and strategies visible, with the responsibilities of different actors or agencies clearly identified and financial, human, and material resources allocated. Having clear policy is necessary... but it is not sufficient.

Given typical ambiguities surrounding ministerial responsibilities and bureaucracies surrounding implementation, identifying a lead ministry or agency (and in practice an influential and charismatic leader) may be the best way forward. With political will to drive forward both horizontal and vertical coordination, and clarify the roles of agencies at national regional and local levels. A review of laws and regulations is also important, given the multiple areas of government that affect young children both directly and indirectly (Neumann and Devercelli, 2012).

The World Bank Systems Approach for Better Education Results (SABER) initiative reviews many of these issues, and offers case studies of how sectoral coordination is achieved in Jamaica, Chile and Tanzania. Figure 15 is an example for Tanzania, based on policy drafted in 2010.

Figure 15: ECD national coordination plan for Tanzania



Source: World Bank (2013). *What Matters Most for Early Childhood Development: a Framework Paper*, p. 27.

7.5 Integration at all levels of governance

Vertical integration includes middle level governance and finance streams which can be a barrier to effective reform.

A study of ECD governance in four low- and middle-income countries (Britto et al., 2014) reports examples of strong coordination being achieved at national level in terms of multi-sectoral policy planning and coordination; and at local level, where for example, village councils made decisions about range of local services. But they note that the weakest area of governance was often at the middle level where within-sector vertical compliance was often a major preoccupation: “...the rhetoric of integration in the national policies did not appear to translate into integrated or even multi-sectoral governance functions...” (Britto et al., 2014). Some of the recognised weaknesses of the ICDS in India are about governance and finance weaknesses at state level, in the local delivery of a national programme (Case Study 1 in Section 2)

7.6 Effective coordination beyond public services

Effective coordination extends to non-state actors, the private sector, NGOs, community groups, etc.

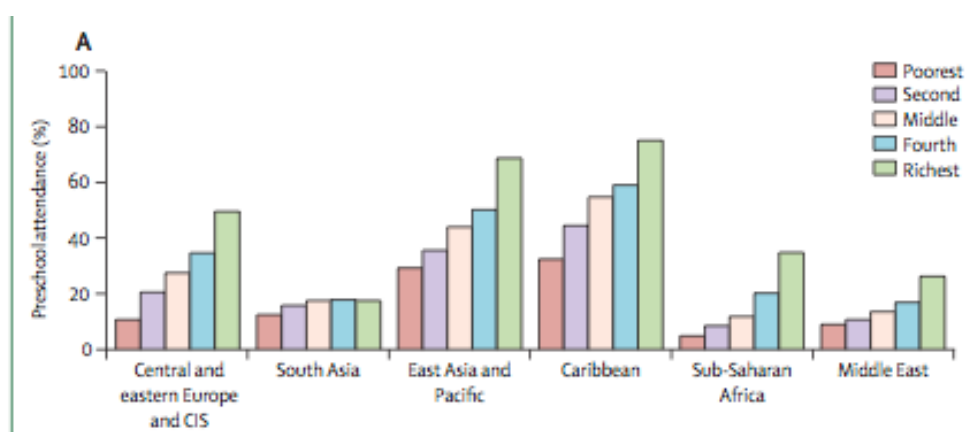
Concerns about integration frequently begin and end with the state sector, overlooking the significant (and in many regions growing) importance of non-state actors (private-for-profit, NGOs, community-based services). All too often these services are outside effective governance systems, or weakly regulated, with the extent of integration highly variable between countries (Woodhead and Streuli, 2013). Besides effective regulative systems, integration can be promoted by including networks of non-state actors on National and local coordination groups, along with key government officials (World Bank, 2013).

7.7 Inclusive and equitable

Integrated ECD systems are inclusive, with careful monitoring for equity, and especially targeted to the most marginalised, disadvantaged as well as disabled children.

As already noted, in many countries, ECD policies are not fully articulated, and even less implemented, services are not universally accessible, nor are they adequately monitored and regulated. The evidence that ECD programmes can transform opportunities and outcomes for disadvantaged children is one of the major arguments for investment in early childhood (Siraj-Blatchford and Woodhead, 2009). Yet, access data for early childhood care and education (ECCE) programmes by socio-economic groups (Figure 16) highlights the serious equity challenge, which in some countries, is also linked to gender, ethnicity and disability (see also Section 5.5). Ironically, unless very carefully targeted, one of the risks of investing in high quality integrated ECD programmes is that resources will be diverted to support ‘gold standard’ provision, most often in urban centres, further skewing access away from those most in need. UNESCO (2014, p. 49, Figure 1.1.3) also has more recent data on the equity challenge.

Figure 16: Poverty and inequality of access to ECCE programmes



Source: UNICEF Multi Indicator Cluster Survey (2005). 3&4 year old preschool attendance x poverty quintiles, cited in Engle et al. (2011).

7.8 Continuity across age phases

Integrated ECD is about ensuring continuity between age phases and smooth transitions between age-linked services.

A holistic child-focused framework is sensitive to the discontinuities that are linked to key transitions (Vogler et al., 2008). These begin with the earliest phases of the life course, notably: the young mother becoming pregnant, preparing for the birth, giving birth, beginning breastfeeding, early care routines, etc.; and in turn, the infant engaging with their environment, establishing key attachment relationships, experiencing vaccinations, attending an ECCE programme, making the transition to school, etc. A combination of developmental priorities and sectoral traditions means that different programmes, professionals and associated ministries are more prominent at each age phase, notably health services

dominating the earliest period and education services increasingly significant later. For parents and children, these transitions can seem abrupt and even stressful, and can be smoothed as part of an effective coordination strategy. Greatest attention has been given to successive educational transitions into preschool and into school (Kagan and Tarrant, 2010).

Integrated ECD identifies entry points for strengthening early learning within health services, and health interventions within school systems, as illustrated by previous sections on specific age phases.

7.9 Capacity building

Building capacity is a priority at every level. Training of sector specialists remains a priority, but with a shared vision for integrated ECD.

One of the biggest obstacles to progress across the whole field of early childhood is the skill shortage at every level, including sectoral experts. In a thought-provoking essay, van Ravens (forthcoming) makes two important points. Firstly, cross-disciplinary working is not an alternative to specialist skills:

“In many sectors of the economy – not just in ECD – we can find both specialists and all-round workers. But if we need a carpenter and a mason, we probably prefer to hire one of each above hiring one person who claims to be excellent in carpentry and masonry at the same time. Mastery of a craft requires intensive learning before and on the job, so the specialist will generally deliver higher quality than someone who does a little bit of all. The single carpenter and the single mason may have to cooperate with each other, but that should be no problem if they are sensible people. People and organisations that deliver integrated ECD programs – encompassing multiple disciplines - can never deliver the same quality as specialists” (van Ravens, forthcoming).

Secondly, one of the consequences of capacity shortages in a low-resource setting is that training programmes typically take recruits with low educational levels, and offer only a very brief training, measured in days and weeks, not years. Faced with this reality, van Ravens (forthcoming) questions whether it may be preferable to train indepth for specific skills, rather than offer very general and superficial training that in practice prepares trainees to deliver relatively little.

Building specific ECD expertise is essential, but wider capacity building is also needed, including of those with responsibility for driving forward ministerial and municipal change, including politicians, civil servants and the research community. Building understanding of ECD amongst parents, communities and civil society is also part of the process of engineering systemic change in the best interests of all young children. Harnessing the resources and influence of the media and advocacy groups, using social media and other new technologies, is all part of the process of building a well informed movement for better understanding about ECD.

7.10 Pragmatic, innovative and sustainable

Implementing more integrated ECD involves being context sensitive, pragmatic and innovative, as well as working in partnership with other stakeholders, including families and communities as well as children.

There is a risk that the current enthusiasm for holistic integrated ECD initiatives could overwhelm initiatives with modest resources or sideline well proven sectoral programmes. Equally, centrally driven system reform can risk overlooking local, practical entry points and cost-effective delivery platforms that build on informal community systems.

“There is now a good deal of pressure on governments to take a holistic approach. And while the overall frameworks should indeed be looking at the whole child, international agencies might do better to acknowledge that ministries ARE sectoral. There has perhaps been too much pressure for ECCD projects at the level of implementation (and especially the ECCD centres) to do everything. ... Policy and programme decisions need to be made in collaboration with families and communities in order to be relevant, affordable, and jointly owned. The good intentions of government as they expand services are laudable and should be acknowledged. However, government cannot do it all. Family and community members are also duty bearers and offer indispensable and complementary contributions towards realising a government’s desire to ensure a good start for all children.” (Arnold, 2004, p. 25 and 27, our emphasis).

Well-governed, well resourced, evidence-based, fully implemented, fully integrated ECD services are a distant goal for many countries. But along the way, many low cost ‘quick-wins’ may be possible, achieved by looking creatively at ways to harness resources of one sector to achieve goals of another, provide supplementary training of sector specialists, ‘piggy-back’ specific innovations within large well established programmes, and build on the capacities for supporting ECD within communities and nations. There is also a risk that over-governed, centralised systems could stifle community-based initiative and innovation which are a hallmark of ECD. Amongst various stakeholders, children themselves also have a role to play in the planning of their learning environment (Clark, 2010). Finally, ECD solutions may involve looking beyond conventional delivery platforms, as illustrated by the potential for video and digital technologies to enhance ECD via television, internet and mobile phones (Ba and Bangura, 2011; Blanchard and Moore, 2011; NAEYC, 2012).

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